

# UTILITIES INDEX

SHEET NAME

SHEET NUMBER

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ESTIMATED UTILITY QUANTITIES						
ITEM NO.	DESCRIPTION	UNIT	Project No. 1: 47023-3261-14			
			QUANTITY	% Utility Betterment	%Project Public	%Project Private
1	791-01.05 6IN STEEL GAS MAIN	LF	1547		100.00%	
1	791-02.02 2IN MDPE GAS MAIN	LF	3348		100.00%	
1	791-02.06 8IN MDPE GAS MAIN	LF	3875		100.00%	
	791-05.73 12IN STEEL CASING	LF	410		100.00%	
	791-05.76 6IN STEEL CASING	LF	320		100.00%	
4	791-06.01 CONNECT TO 1-1/4IN EX PE MAIN	EA	3		100.00%	
4	791-06.02 CONNECT TO 2IN EX PE MAIN	EA	2		100.00%	
4	791-06.03 CONNECT TO 4IN EX PE MAIN	EA	1		100.00%	
4	791-06.04 CONNECT TO 6IN EX PE MAIN	EA	1		100.00%	
4	791-06.05 CONNECT TO 8IN EX PE MAIN	EA	10		100.00%	
	791-06.10 CONNECT TO 2IN EX STL MAIN	EA	1		100.00%	
4	791-06.12 CONNECT TO 6IN EX STL MAIN	EA	3		100.00%	
	791-07.01 2IN PE GAS VALVE ASSEMBLY	EA	10		100.00%	
5	791-07.04 8IN PE GAS VALVE ASSEMBLY	EA	14		100.00%	
5	791-07.11 6IN STEEL GAS VALVE ASSEMBLY	EA	4		100.00%	
5	791-08.06 1/2IN PE SERVICE PIPE	LF	1089		100.00%	
5	791-08.09 1-1/4IN PE SERVICE PIPE	LF	407		100.00%	
5	791-08.10 2IN PE SERVICE PIPE	LF	97		100.00%	
9	791-10.03 RET. IN PLACE 1-1/4IN SERV CUT & PLUG	LF	10		100.00%	
	791-10.10 RETIRE EXSTING GAS MAIN	LS	1		100.00%	
	791-15.50 MICRO TUNNELING (ROCK) W/48IN STEEL CASING	LF	155		100.00%	

- FOOTNOTES
- 1 INCLUDES ALL MATERIALS INCLUDING SAND/STONE BEDDING, FLOWABLE FILL, TEMPORARY PAVEMENT IN OR OUT OF ROW, LABOR, EQUIPMENT FOR COMPLETE INSTALLATION OF PIPE INCLUDING BUT NOT LIMITED TO TRAFFIC CONTROL, EXCAVATION INCLUDING DIRT/ROCK, BACKFILLING, CREEK CROSSINGS PER SWPPP, COUPLINGS, FITTINGS, PIPE FUSION, APPURTENANCES, MAINTAINING THE TRENCH, PURGE POINT INSTALLATION, TESTING BY UTILITY SPECIFICATIONS TO INCLUDE BUT NOT LIMITED TO AIR, NITROGEN, HYDROSTATIC OR X-RAY, DEW POINT OR DRYING, AND ANY OTHER LABOR OR MATERIAL REQUIRED TO COMPLETE THE WORK AS SPECIFIED ON THE PLANS.
- 3 INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT, NECESSARY FOR BORE & JACK OF GAS LINE CASING PIPE INCLUDING BUT NOT LIMITED TO ENTRY AND EXIT PITS, B&J EQUIPMENT AND TRAFFIC CONTROL. CARRIER PIPE SHALL BE PAID AT THE OPEN CUT ITEM PRICE.
- 4 INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT, NECESSARY FOR CONNECTING TO EXSTING GAS LINE INCLUDING TRAFFIC CONTROL.
- 5 INCLUDES TRANSITION FITTINGS, VALVES, VALVE BOX, BOXADJUSTMENT, VALVE BOX COLLAR, VALVE MARKER, EXCAVATION, BEDDING, BACKFILL, COUPLINGS, FUSION TEES, TAP OF EXSTING LINE, AND ALL OTHER NECESSARY MATERIALS AND LABOR FOR COMPLETE INSTALLATION OF ASSEMBLY INCLUDING TRAFFIC CONTROL
- 6 INCLUDES ALL MATERIALS, PARTS, LABOR, EQUIPMENT, MACHINERY, TOOLS, OR APPARATUS NECESSARY FOR INSTALLATION OF GAS SERVICE ASSEMBLIES AS DESCRIBED IN THE PLANS AND SPECS. INSTALLATION FOR LONG SIDE AND SHORT SIDE APPLICATIONS. SERVICE PIPE SHALL BE PAID PER LINEAR FOOT INSTALLED.
- 9 INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT FOR RETIREMENT OF ITEM INCLUDING STABILIZING THE ITEM OF PLANT PER UTILITY SPECIFICATIONS.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-1

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00

COORDINATE VALUES ARE NAD/83(1995)  
AND ARE DATUM ADJUSTED BY THE  
FACTOR 1.0001 & TIED TO THE TGRN.

BWSC

520 West Summit Hill Drive, Suite 1002, Knoxville, Tennessee 37902  
PHONE (865) 637-2800 FAX (865) 673-8554  
BWSC PROJECT NO. 34826-00

BARBE  
WAGBOWER  
SUMNER &  
CANNON, INC.

KNOXVILLE  
UTILITIES  
BOARD

ESTIMATED  
QUANTITIES

GENERAL NOTES:

1. ALL CORRESPONDENCE TO TDOT SHALL BE ADDRESSED TO TENNESSEE DEPARTMENT OF TRANSPORTATION, REGION I, 7345 REGION LANE, KNOXVILLE, TENNESSEE 37914. A COPY OF ALL CORRESPONDENCE ADDRESSED TO TDOT SHALL BE COPIED TO THE UTILITY.
2. ALL CORRESPONDENCE, SUBMITTALS OR OTHER ITEMS ASSOCIATED WITH THE CONTRACT SHALL BE IDENTIFIED WITH THE PROJECT OWNER, PROJECT NAME, AND TDOT PIN NUMBER AS LISTED IN THE CONTRACT DOCUMENTS.
3. CLEARING AND CLEANING OF PROJECT SITE OF PLANT LIFE AND DEBRIS SHALL BE UNDER GENERAL AGREEMENT WITH TDOT AND PRIME CONTRACTOR.
4. ALL EROSION AND SEDIMENTATION CONTROL OF PROJECT SITE SHALL BE UNDER GENERAL AGREEMENT WITH TDOT AND PRIME CONTRACTOR AND IN ACCORDANCE WITH TDEC PERMITS. UTILITY CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF WATER QUALITY PERMITS AND STORM WATER POLLUTION PREVENTION PLAN.
5. EXISTING UNDERGROUND INSTALLATIONS SUCH AS WATER LINES, GAS MAINS AND SEWERS ARE INDICATED ON THE DRAWINGS TO THE EXTENT THAT IS SHOWN ON THE TDOT SUPPLIED DRAWINGS. THERE IS NO GUARANTEE AS TO THE ACCURACY AND COMPLETENESS OF SUCH INFORMATION AND ALL RESPONSIBILITY FOR ACCURACY IS EXPRESSLY DISCLAIMED. CONTRACTOR SHALL CONTACT TENNESSEE ONE CALL (DIAL 811) FOR ACTUAL EXISTING UTILITY LOCATIONS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR LOCATING ALL UNDERGROUND INSTALLATIONS. THE CONTRACTOR SHALL USE HIS OWN INFORMATION AND SHALL NOT RELY UPON INFORMATION INDICATED ON THE DRAWINGS CONCERNING EXISTING UNDERGROUND INSTALLATIONS.
6. IN THE EVENT OF DAMAGE TO EXISTING UTILITIES, THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL REPAIRS AND RELATED EXPENSE.
7. ANY TEMPORARY OR PERMANENT PAVEMENT REPAIR SHALL BE IN ACCORDANCE WITH THE ROADWAY CONTRACT.
8. THE GENERAL NOTES AND SPECIFICATIONS CONTAIN MINIMUM REQUIREMENTS FOR THIS PROJECT. UTILITY CONSTRUCTION SHALL ALSO CONFORM TO THE REQUIREMENTS OF THE ROADWAY CONTRACT, PARTICULARLY FOR TRENCHING, BACKFILL, COMPACTION AND CONSTRUCTION OPERATIONS.
9. THE CONTRACTOR MUST PERFORM ALL CONSTRUCTION WITHIN RIGHTS-OF-WAY OR EASEMENTS.
10. IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN ALL UTILITY SERVICES DURING CONSTRUCTION. MAINTAIN A LIST OF EMERGENCY CONTACTS FOR EACH UTILITY IN CASE OF ACCIDENTAL UTILITY DAMAGE.
11. THE CONTRACTOR SHALL FOLLOW ALL OSHA REGULATIONS PERTAINING TO CONSTRUCTION OPERATIONS.
12. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE TEMPORARY TRAFFIC CONTROL MEASURES TO INSURE ACCESS AND SAFETY AT ALL TIMES FOR MOTORISTS, PEDESTRIANS, RESIDENTS, BUSINESSES, ETC.
13. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED IN ACCORDANCE WITH THE ROADWAY CONTRACT.
14. CONTRACTOR SHALL POT HOLE EXISTING UTILITIES TO VERIFY DEPTHS AND ADJUSTMENTS TO HORIZONTAL OR VERTICAL ALIGNMENTS TO AVOID ANY EXISTING UTILITIES SHALL BE APPROVED BY UTILITY OWNER PRIOR TO INSTALLATION.
15. A MINIMUM OF 36 INCHES OF COVER IS REQUIRED OVER ALL NEW UTILITIES, UNLESS NOTED OTHERWISE ON THE PLANS.
16. ALL UTILITY MAINS LARGER THAN 6 INCHES THAT ARE TO BE ABANDONED SHALL BE PLUGGED AND FILLED WITH GROUT.
17. ELECTRO FUSION COUPLINGS MAY BE USED IN LEIU OF BUTT FUSION TIE-INS WITH OWNER'S APPROVAL.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-2

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
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**BWSC**

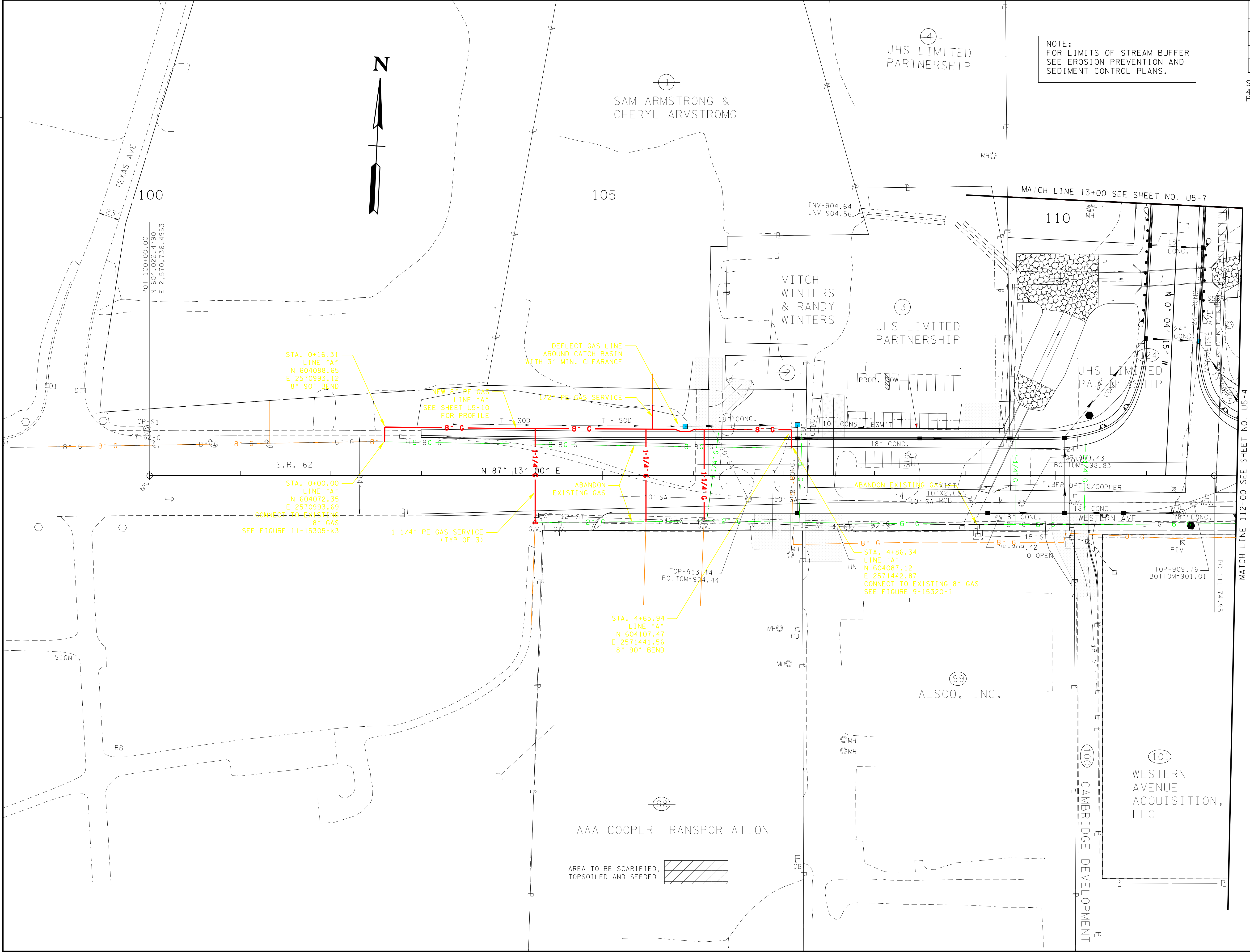
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PHONE (865) 637-2880 FAX (865) 673-8554  
BWSC PROJECT NO. 34826-00

**BARBE  
WAGGONER  
SUMNER &  
CANNON, INC.**

KNOXVILLE  
UTILITIES  
BOARD



GENERAL NOTES  
LEGEND



TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-3

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00

NOTE:  
FOR LIMITS OF STREAM BUFFER  
SEE EROSION PREVENTION AND  
SEDIMENT CONTROL PLANS.

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BWSC PROJECT NO. 34826-00

BARBE  
WAGGONER  
SUMNER &  
CANNON, INC.

KNOXVILLE  
UTILITIES  
BOARD

PROPOSED  
GAS LINE PLAN  
LINE A  
STA. 100+00 TO STA. 112+00

SCALE: 1"= 50'

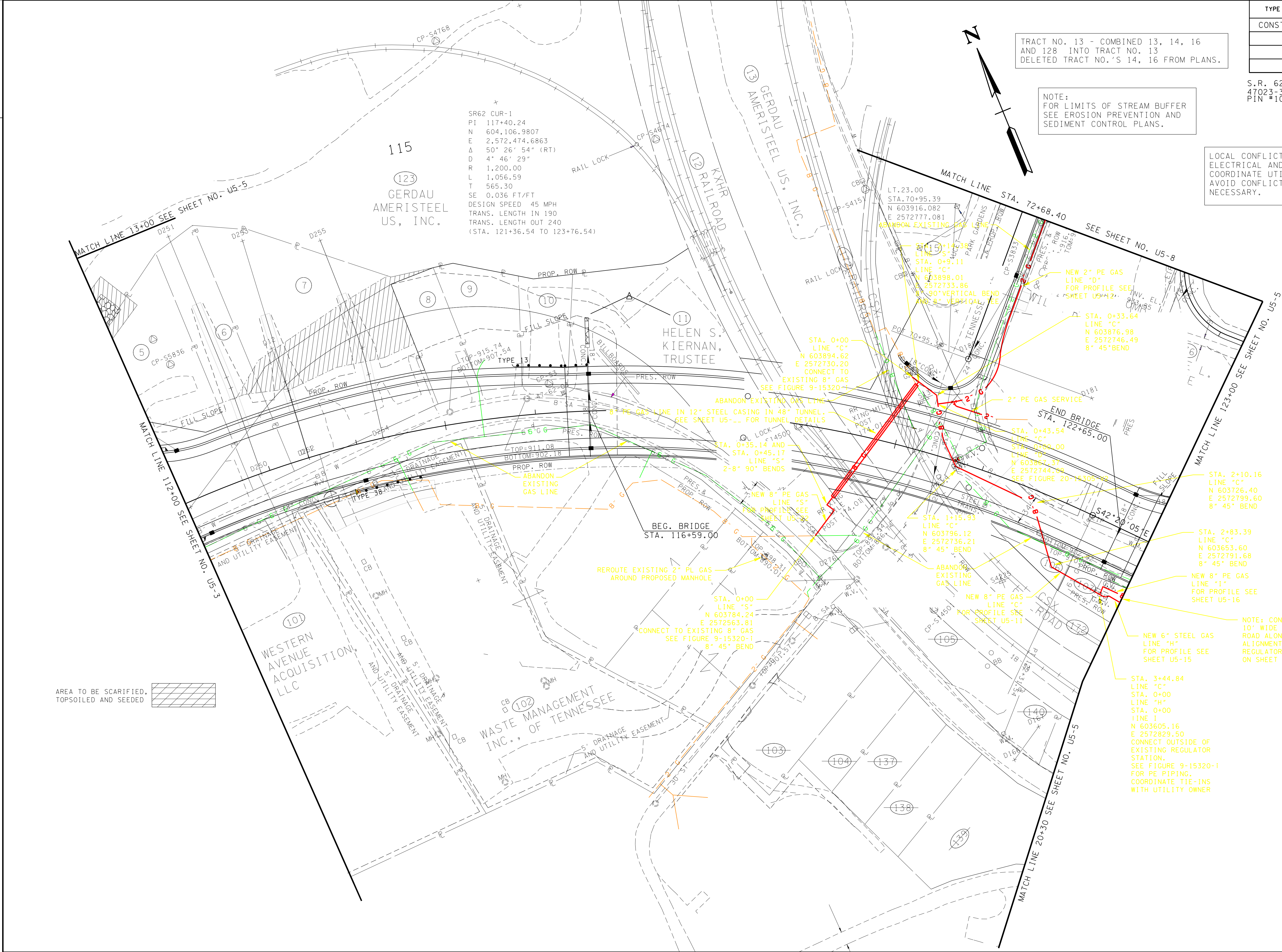
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CONST	2016	HPP/STP-62(34)	U5-4

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00

LOCAL CONFLICTS WILL OCCUR BETWEEN ELECTRICAL AND GAS UTILITIES. COORDINATE UTILITY INSTALLATION TO AVOID CONFLICTS OR DEFLECT GAS AS NECESSARY.

TRACT NO. 13 - COMBINED 13, 14, 16 AND 128 INTO TRACT NO. 13  
DELETED TRACT NO.'S 14, 16 FROM PLANS.

NOTE:  
FOR LIMITS OF STREAM BUFFER  
SEE EROSION PREVENTION AND  
SEDIMENT CONTROL PLANS.



AREA TO BE SCARIFIED,  
TOPSOILED AND SEEDED

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SUMNER &  
CANNON, INC.**

KNOXVILLE  
UTILITIES  
BOARD

PROPOSED  
GAS LINE PLAN  
LINES C & S  
STA. 112+00 TO STA. 123+00

SCALE: 1"= 50'



TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-5

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00

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BWSC PROJECT NO. 34826-00

**BARBE WAGGONER SUMNER & CANNON, INC.**

KNOXVILLE UTILITIES BOARD

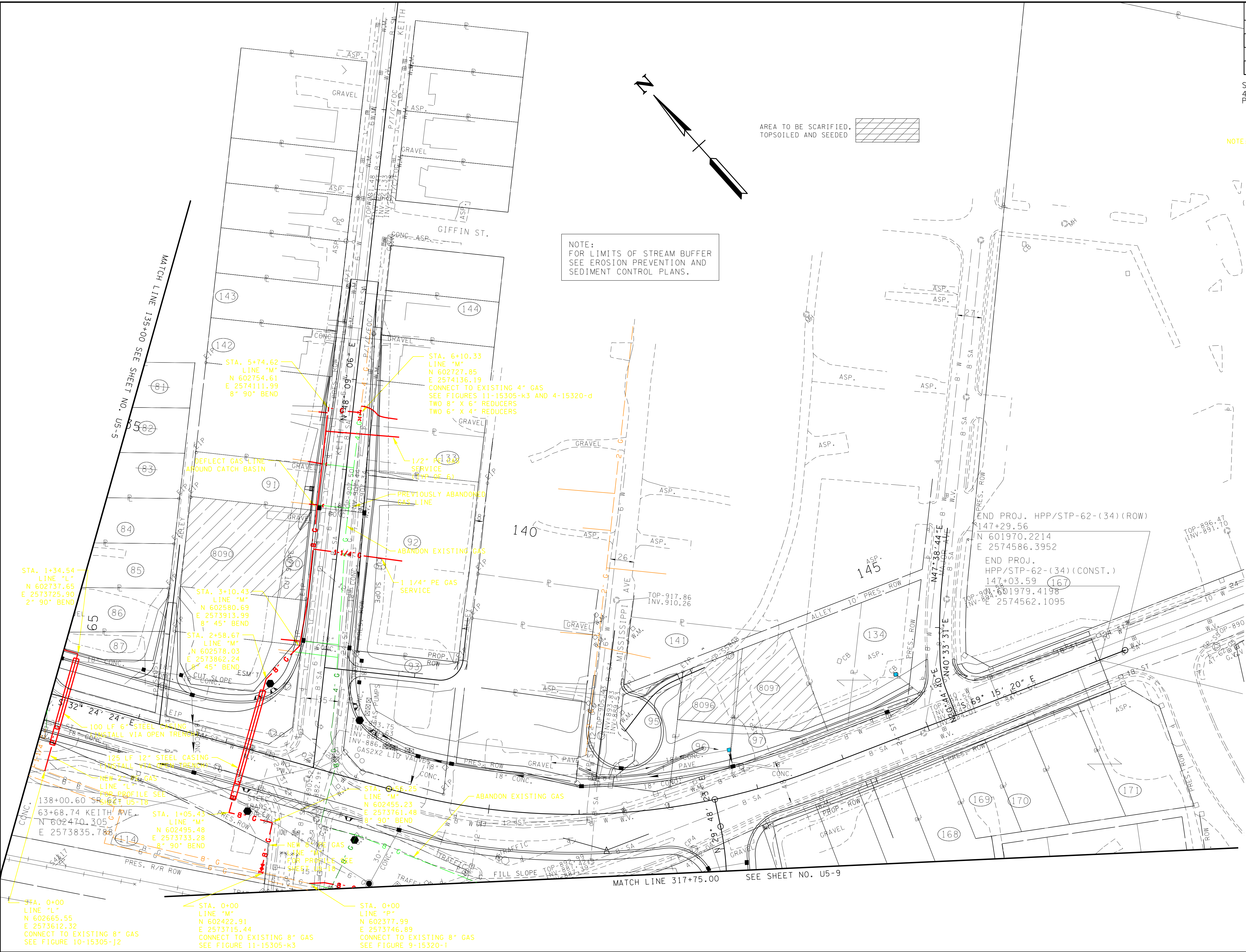
PROPOSED GAS LINE PLAN  
LINES H, I, J, K & L  
STA. 123+00 TO STA. 135+00

SCALE: 1"= 50'

TENNESSEE D.O.T. DESIGN DIVISION FILE NO.
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TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-6

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



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**BWSC** **BARGE  
WAGGONER  
SUMMER &  
CANNON, INC.**

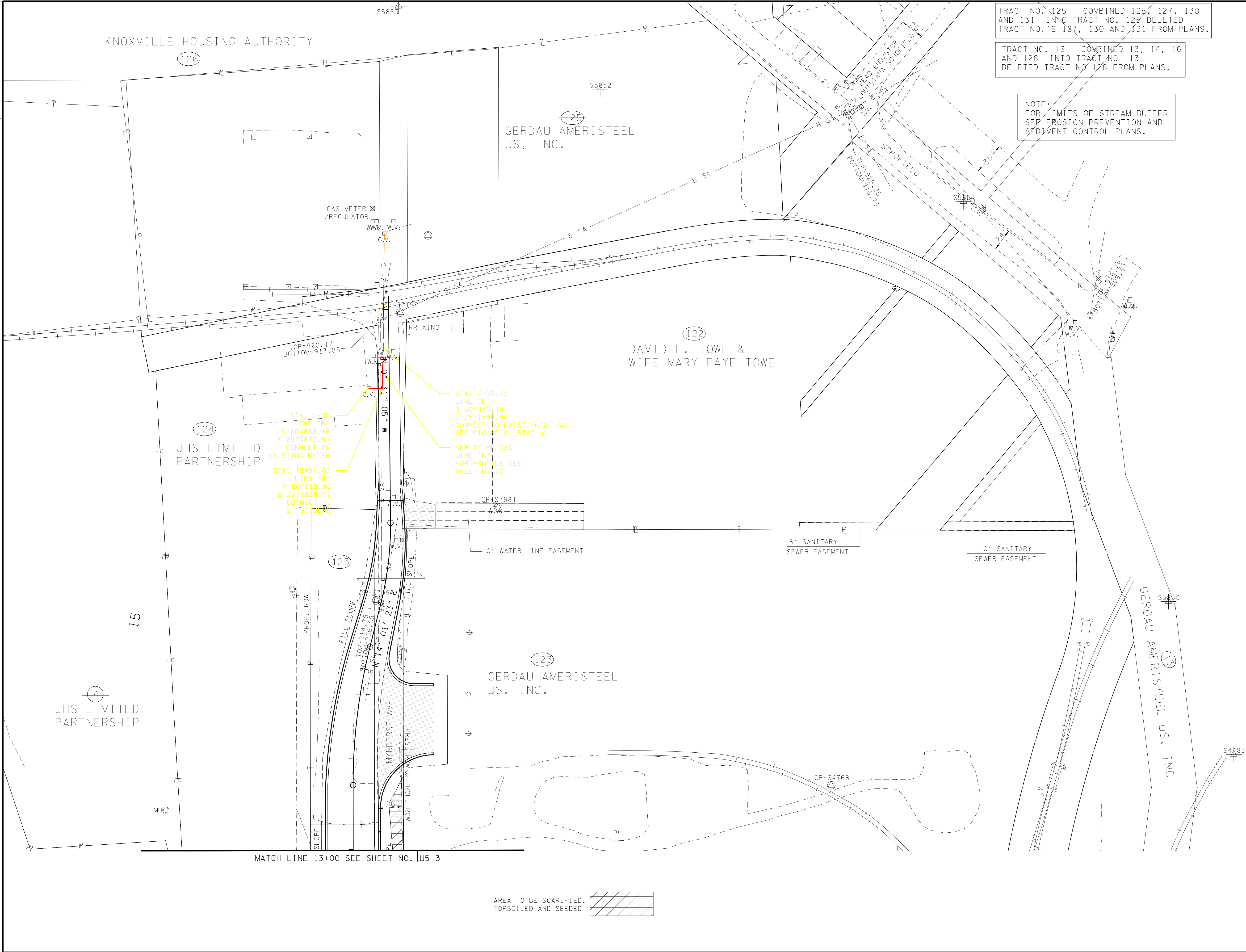
520 West Summit Hill Drive, Suite 102, Knoxville, Tennessee 37902  
PHONE (865) 637-2810 FAX (865) 673-8554

BWSC PROJECT NO. 34826-00

KNOXVILLE  
UTILITIES  
BOARD

**PROPOSED  
GAS LINE PLAN  
LINES L, M & P**  
STA. 135+00 TO STA. 147+00

SCALE: 1" = 50'



TRACT NO. 125 - COMBINED 125, 127, 130 AND 131 INTO TRACT NO. 125 DELETED TRACT NO.'S 127, 130 AND 131 FROM PLANS.

TRACT NO. 13 - COMBINED 13, 14, 16 AND 128 INTO TRACT NO. 13 DELETED TRACT NO. 128 FROM PLANS.

NOTE:  
FOR LIMITS OF STREAM BUFFER  
SEE EROSION PREVENTION AND  
SEDIMENT CONTROL PLANS.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-7

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



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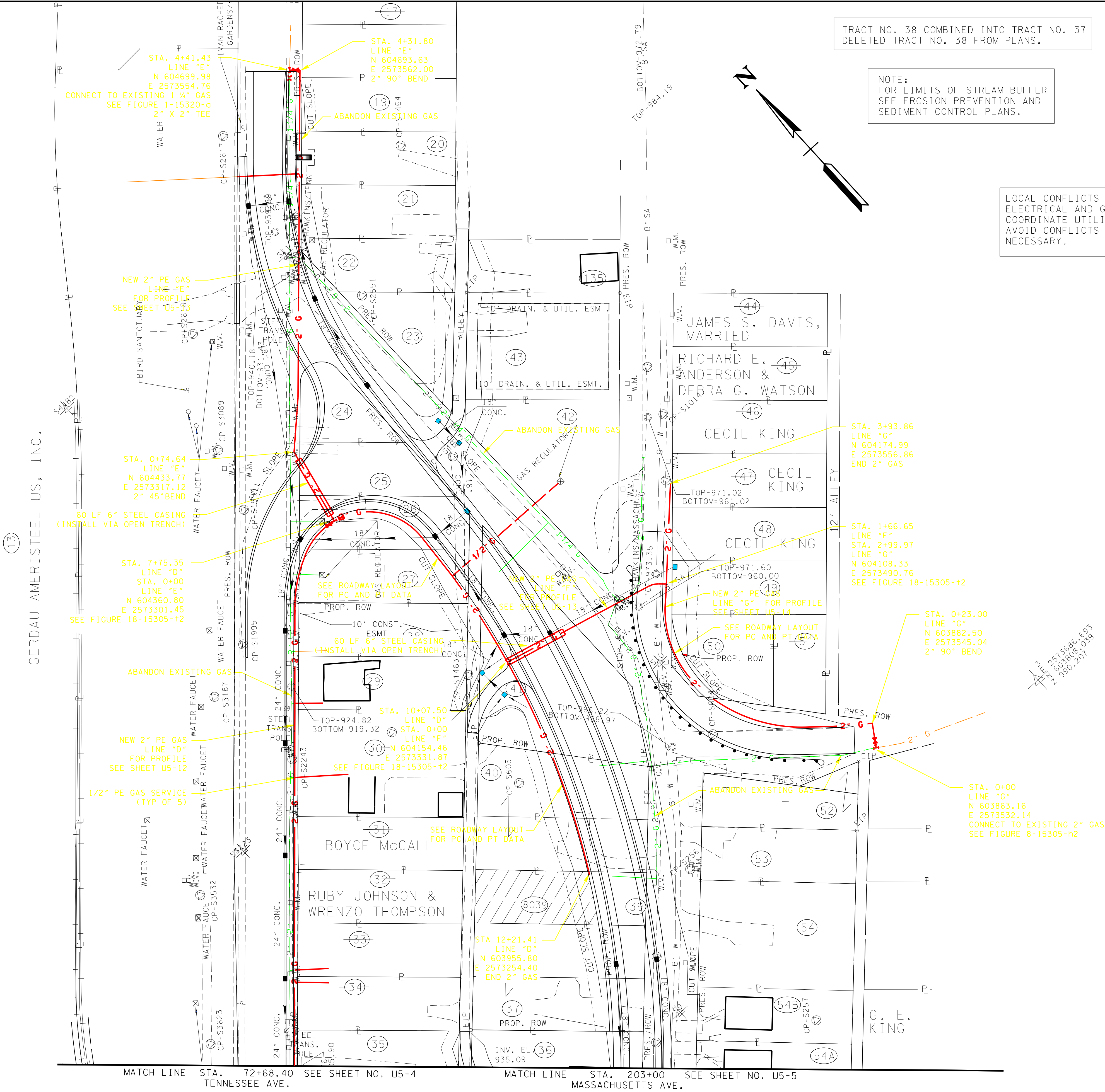
**BWSC**  
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BWSC PROJECT NO. 34826-00

BARBE  
WAGGONER  
SUMNER &  
CANNON, INC.

KNOXVILLE  
UTILITIES  
BOARD

PROPOSED  
GAS LINE PLAN  
LINE B  
MYNDERSE AVE.

SCALE: 1"= 50'



TRACT NO. 38 COMBINED INTO TRACT NO. 37  
DELETED TRACT NO. 38 FROM PLANS.

NOTE:  
FOR LIMITS OF STREAM BUFFER  
SEE EROSION PREVENTION AND  
SEDIMENT CONTROL PLANS.

LOCAL CONFLICTS WILL OCCUR BETWEEN  
ELECTRICAL AND GAS UTILITIES.  
COORDINATE UTILITY INSTALLATION TO  
AVOID CONFLICTS OR DEFLECT GAS AS  
NECESSARY.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-8

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00

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BWSC PROJECT NO. 34826-00

BARBE  
WAGGONER  
SUMNER &  
CANNON, INC.

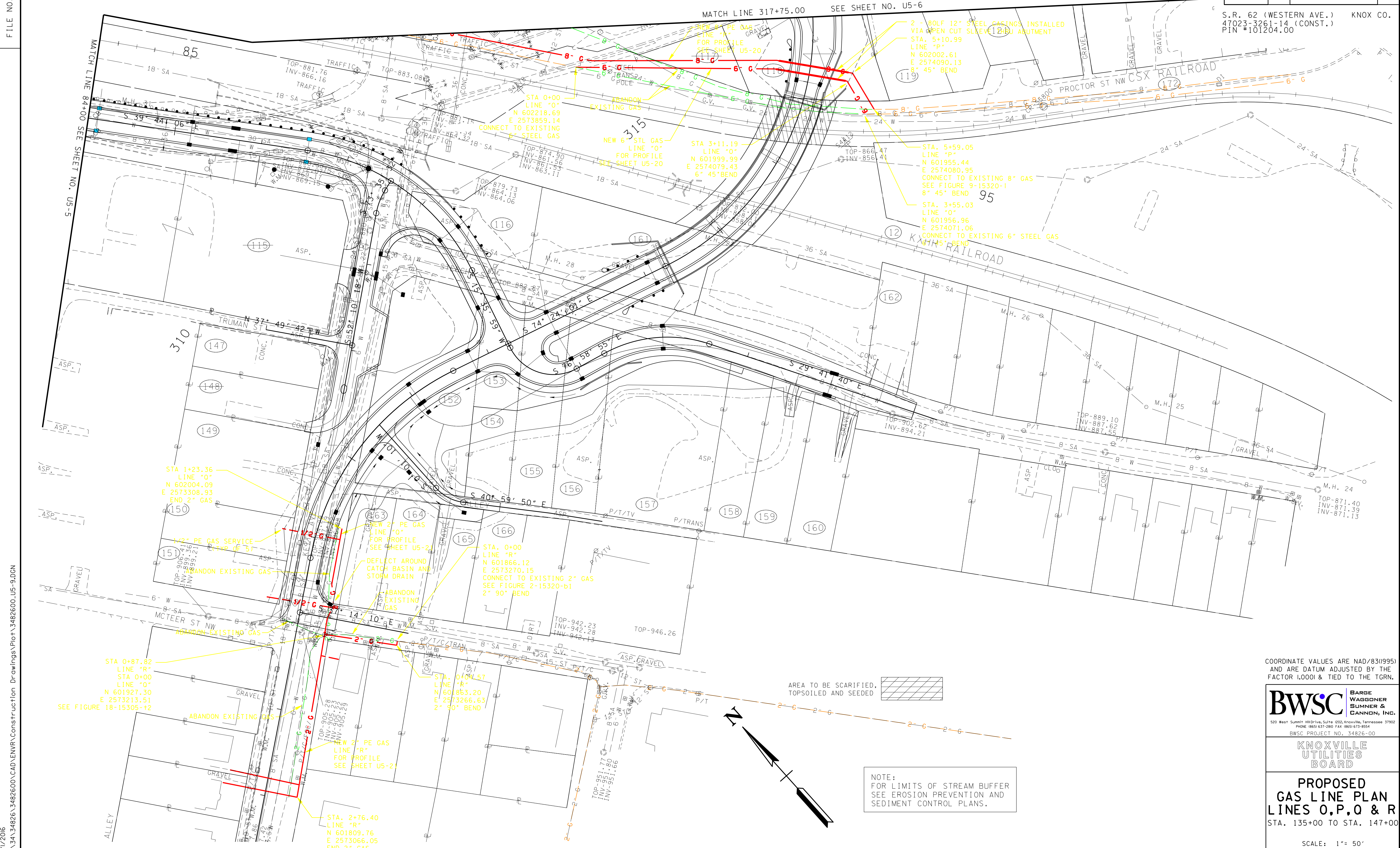
KNOXVILLE  
UTILITIES  
BOARD

PROPOSED  
GAS LINE PLAN  
LINES D, E, F & G  
MASSACHUSETTS AVE.

SCALE: 1" = 50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-9

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



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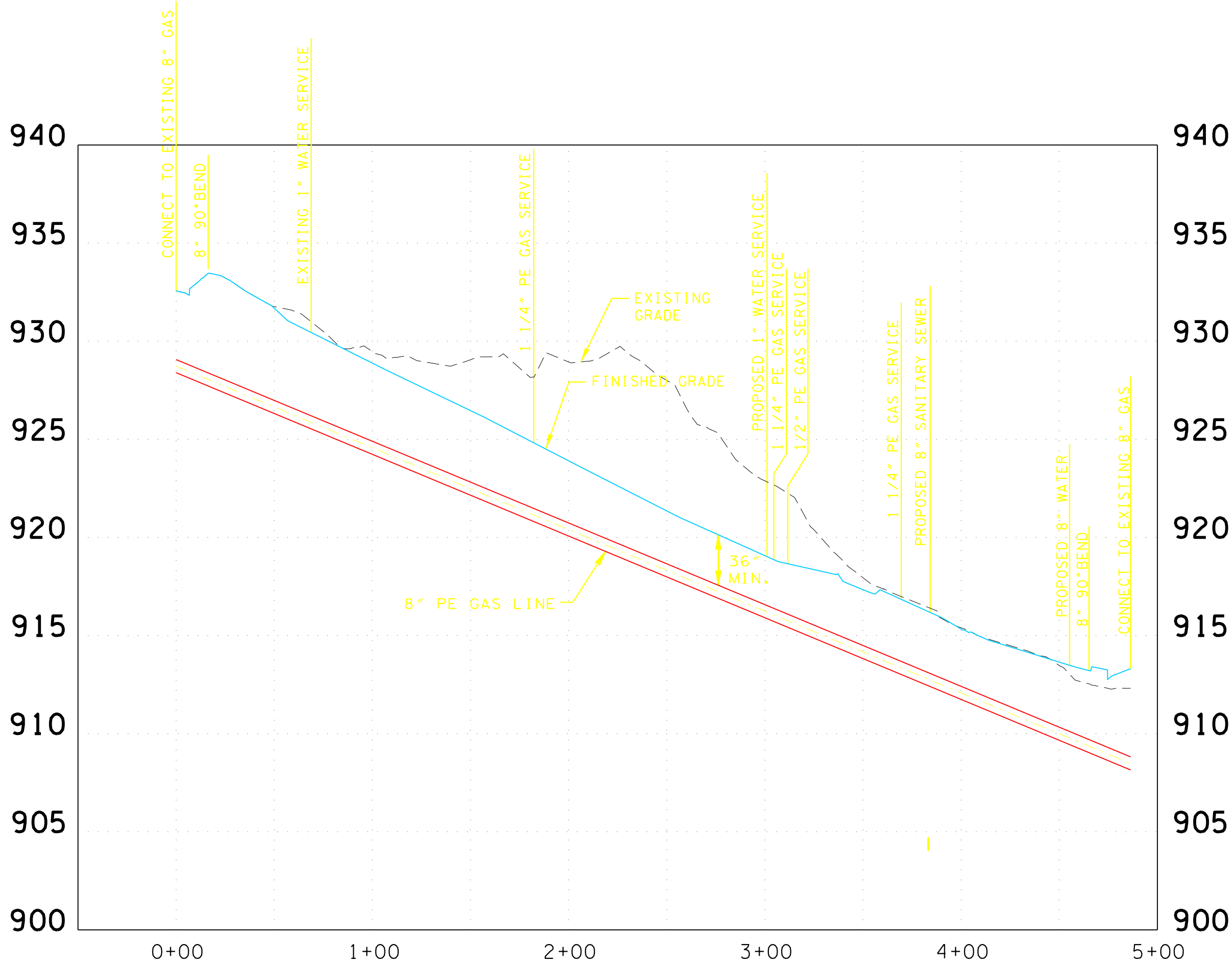
KNOXVILLE  
UTILITIES  
BOARD

**PROPOSED  
GAS LINE PLAN  
LINES O, P, Q & R**  
STA. 135+00 TO STA. 147+00

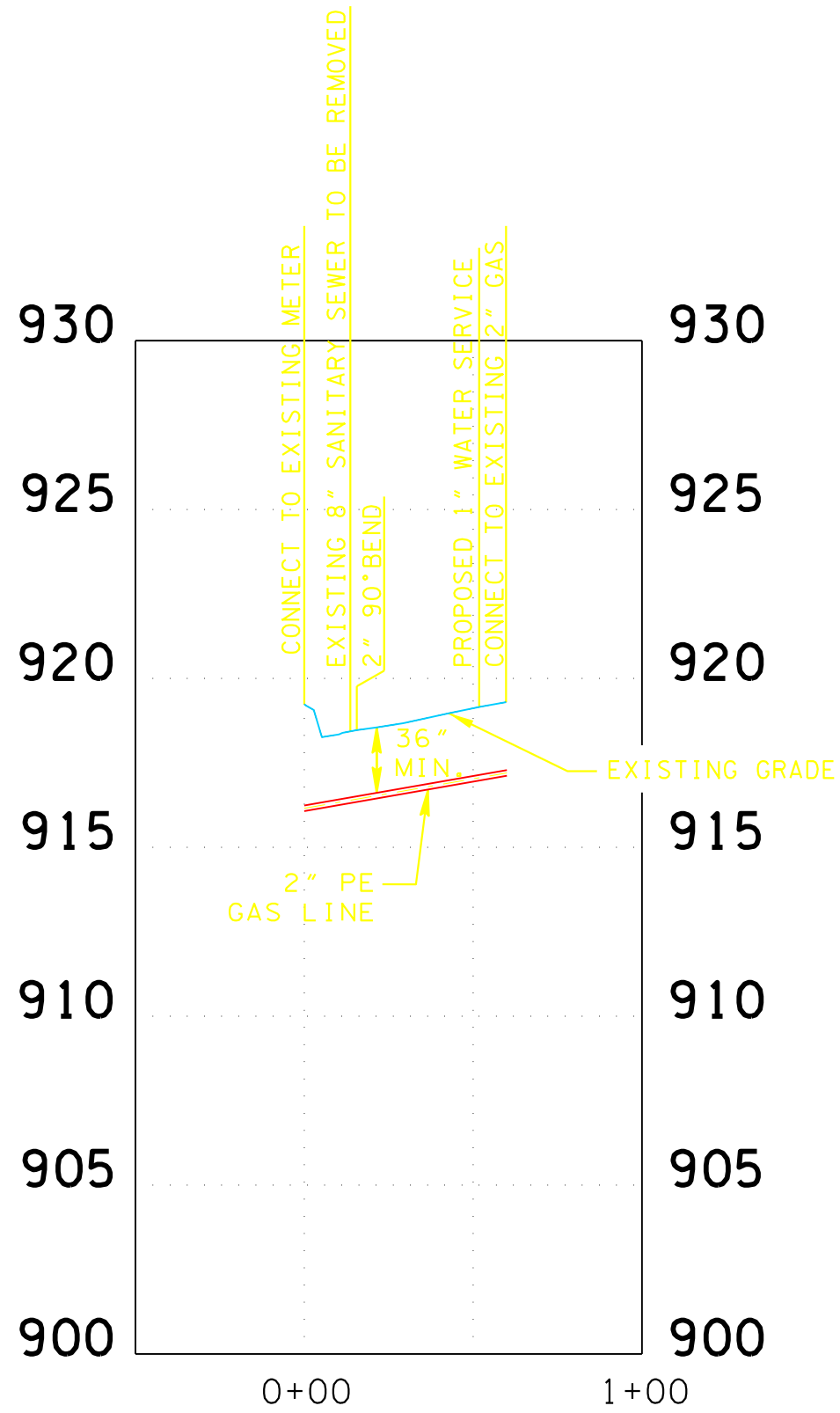
SCALE: 1"= 50'

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-10

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



LINE A



LINE B

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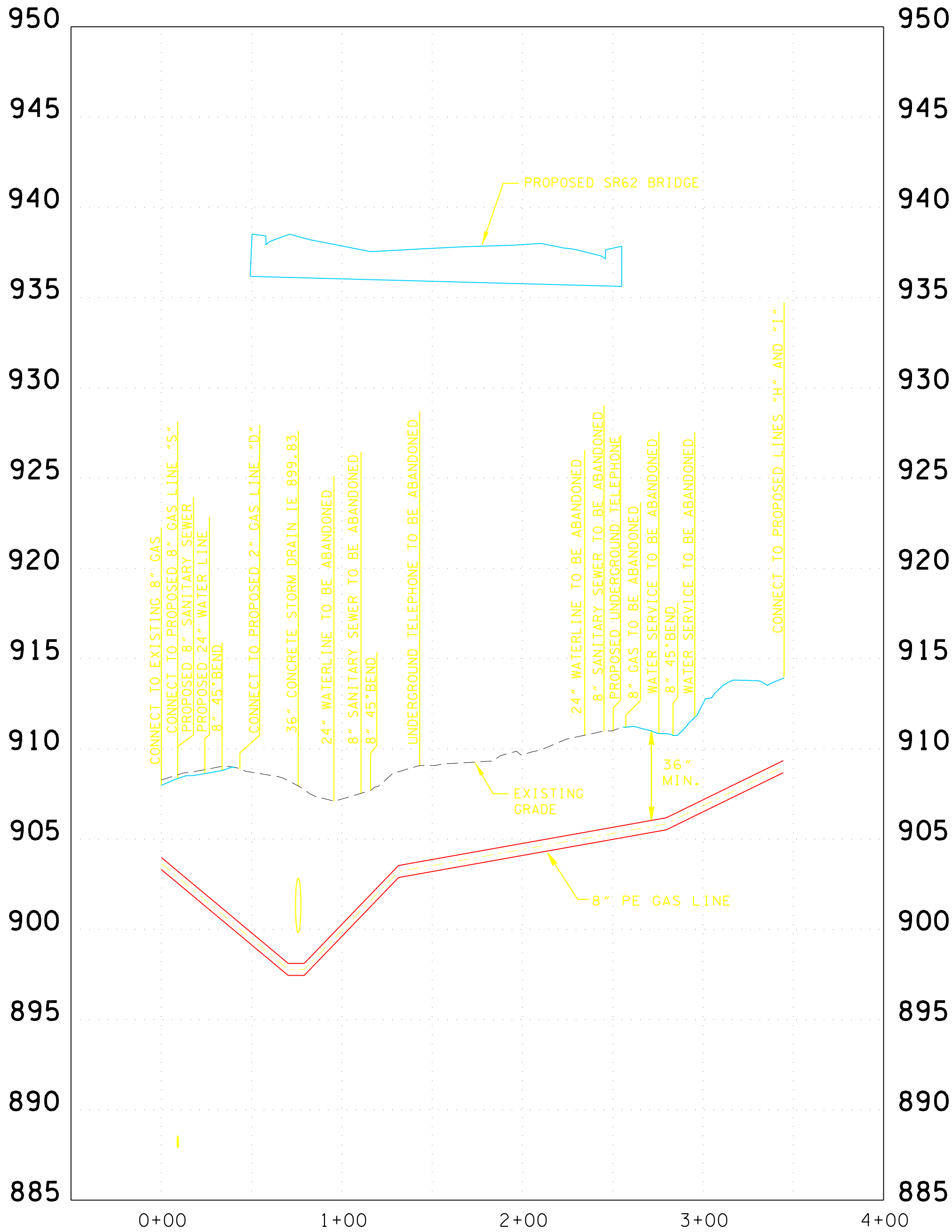
**BARBE  
WAGBOWER  
SUMNER &  
CANNON, INC.**

KNOXVILLE  
UTILITIES  
BOARD

PROFILE  
GAS  
LINES A & B  
STA. 0+00 TO STA. EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-11

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



LINE C

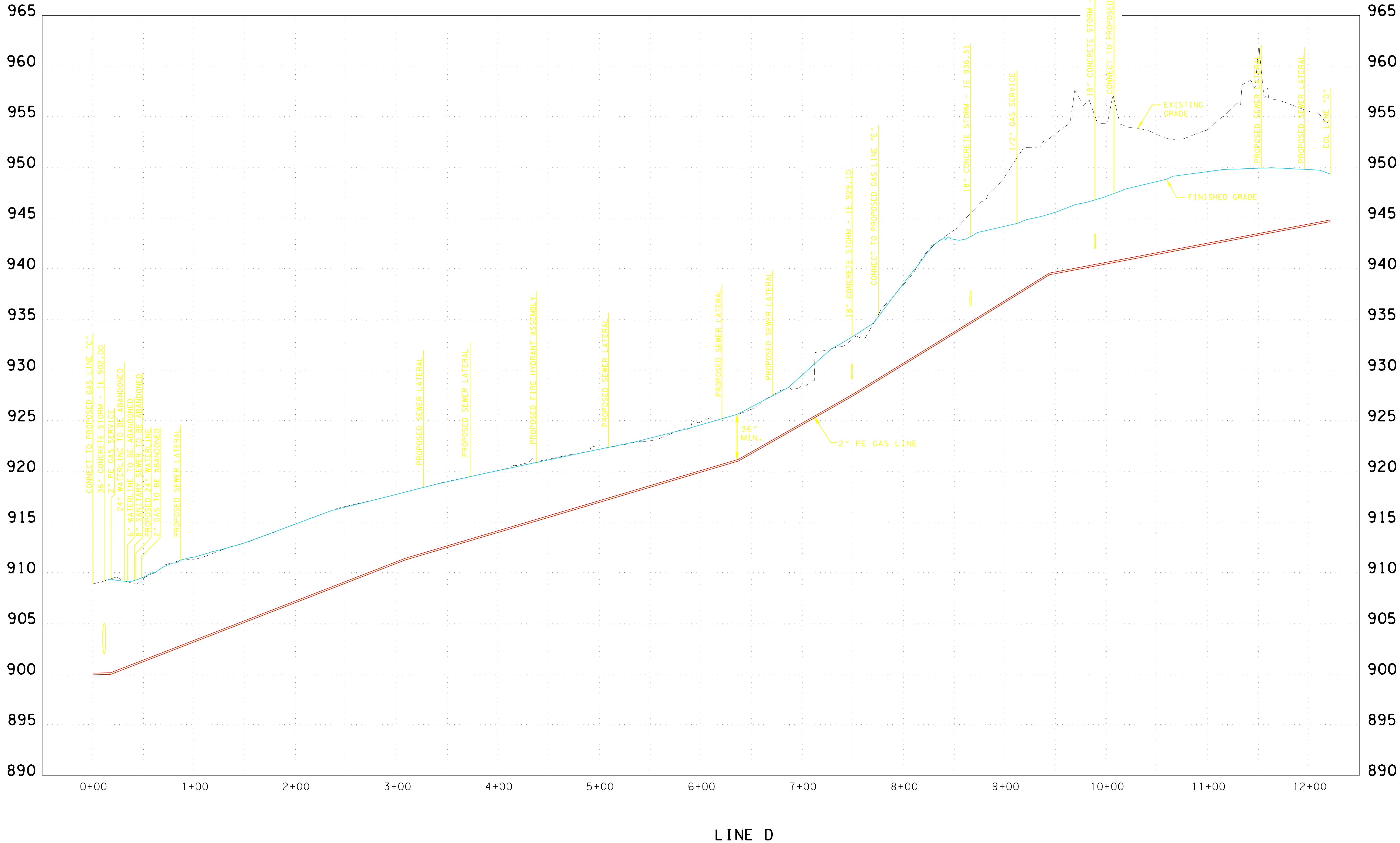
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**KNOXVILLE  
UTILITIES  
BOARD**

**PROFILE  
GAS  
LINE C**  
STA.0+00 TO STA.EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.



TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-12

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
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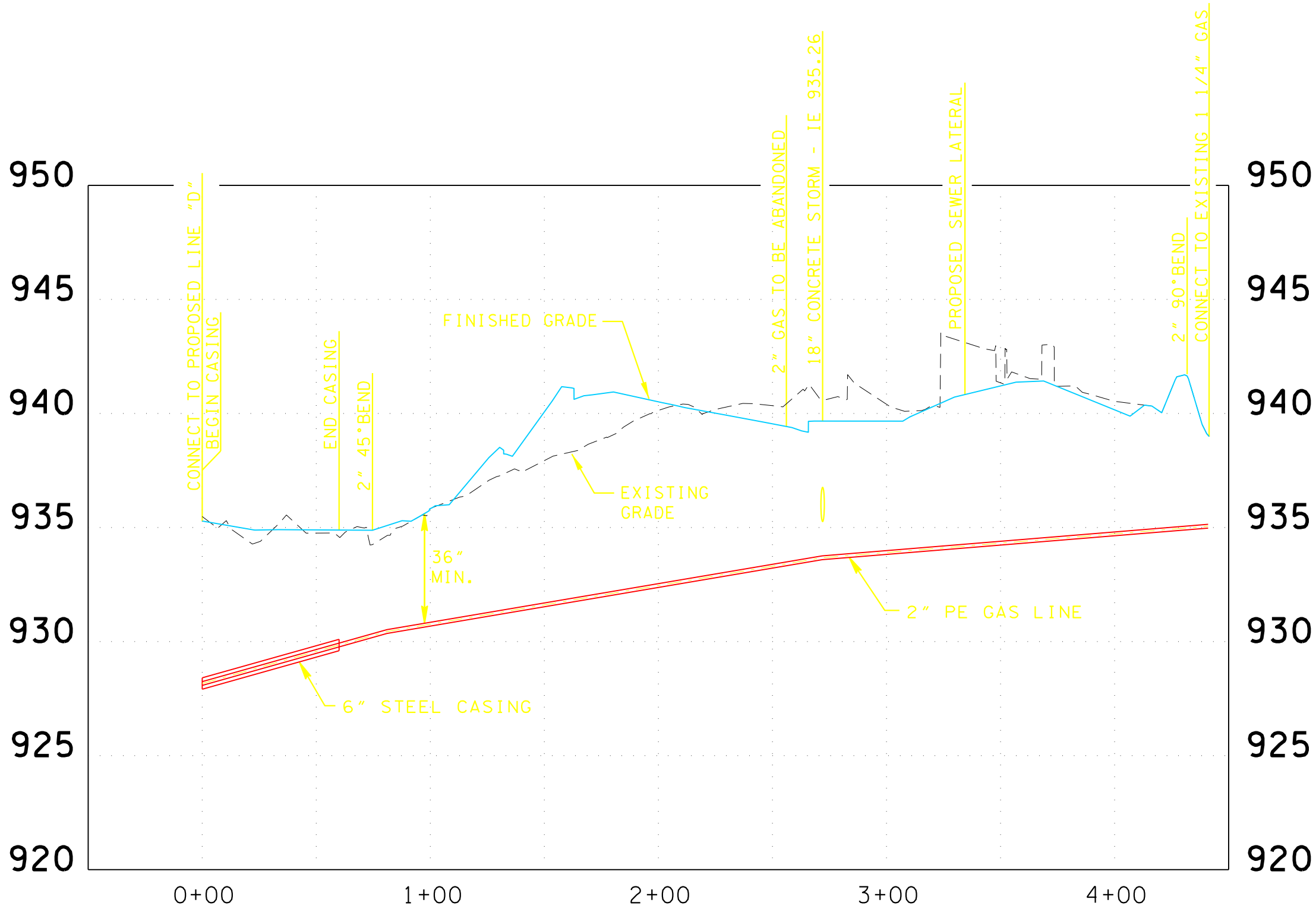
KNOXVILLE  
UTILITIES  
BOARD

PROFILE  
GAS  
LINE D

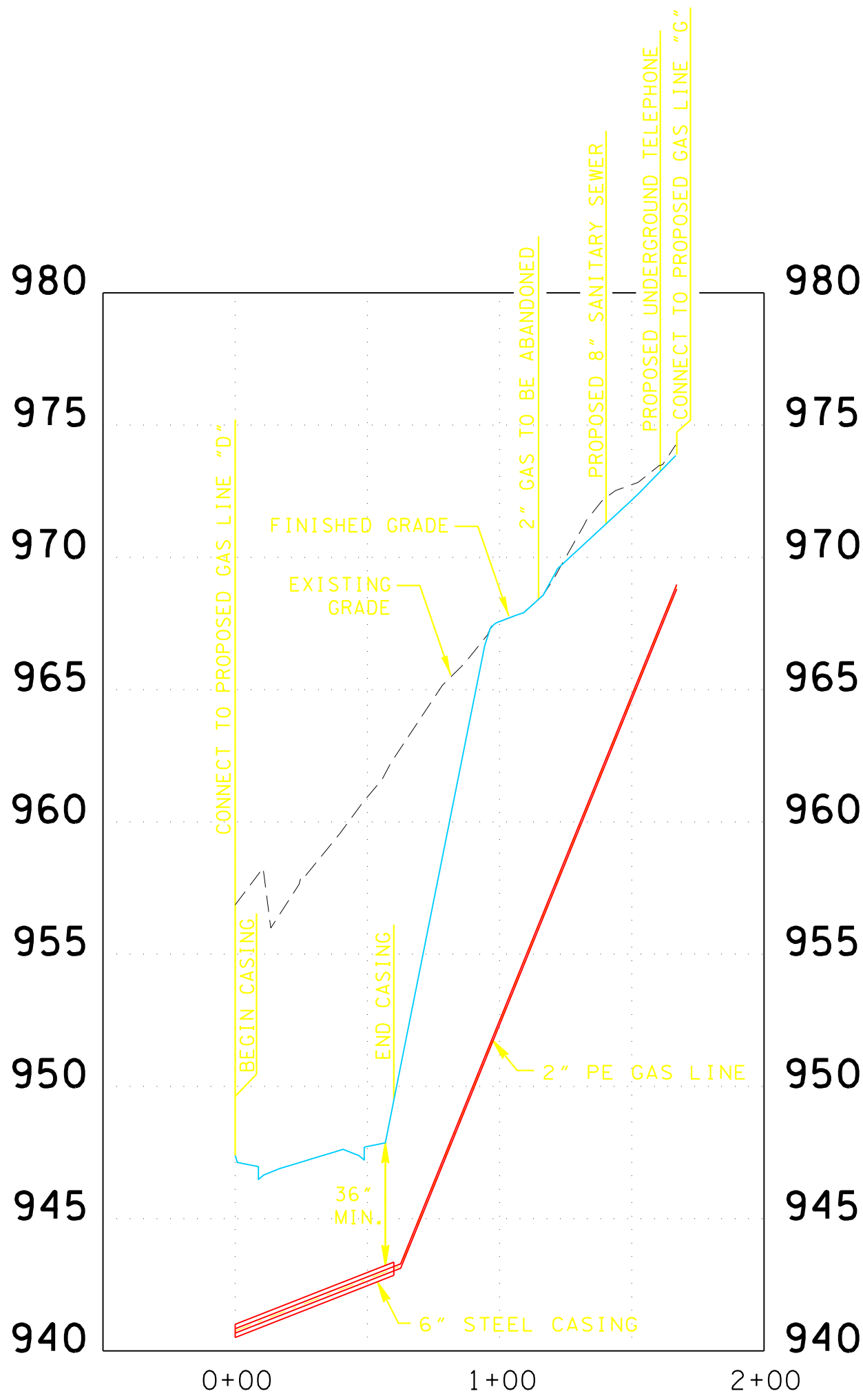
STA. 0+00 TO STA. EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-13

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



LINE E



LINE F

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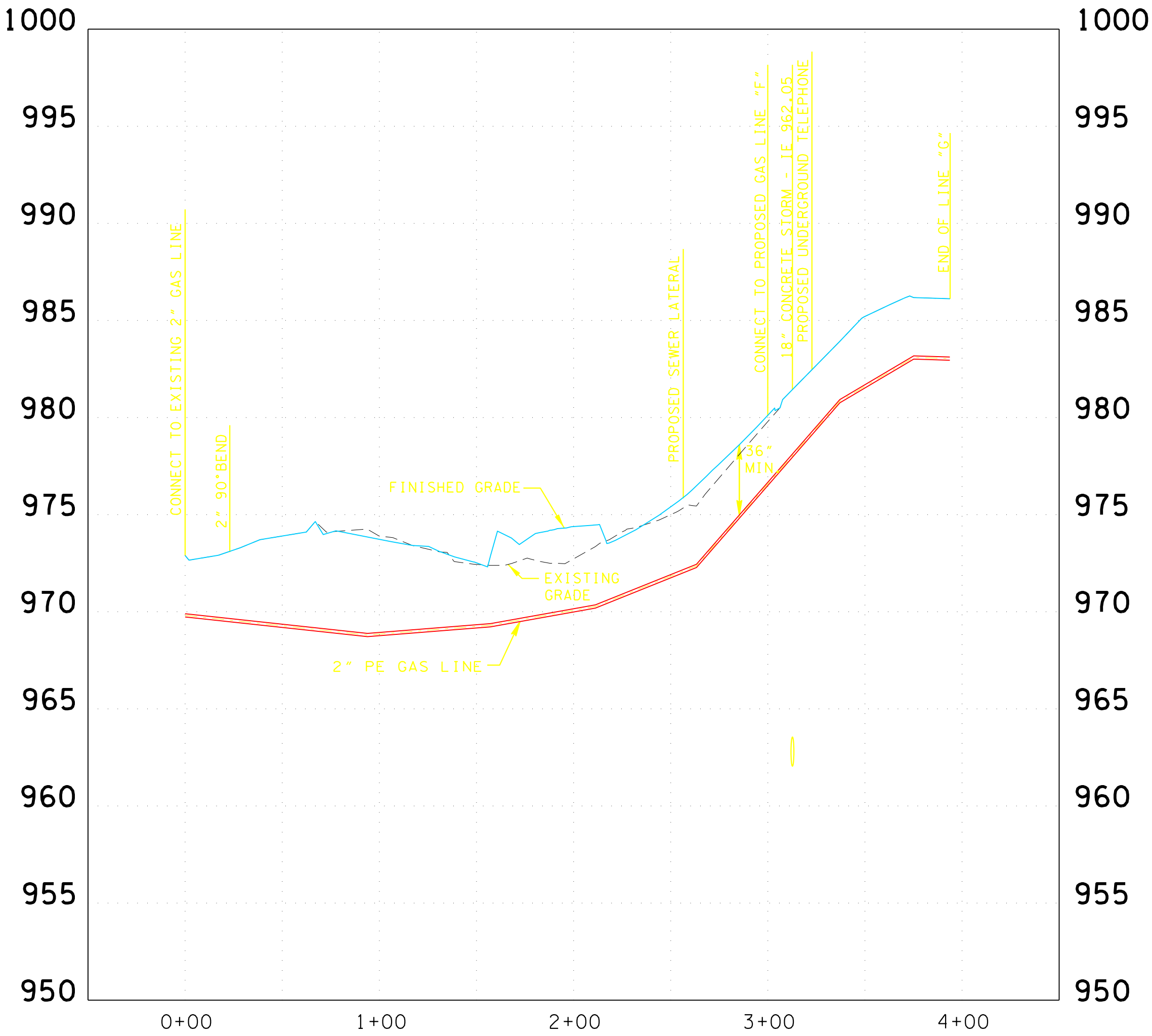
KNOXVILLE  
UTILITIES  
BOARD

PROFILE  
GAS  
LINE E & F

STA. 0+00 TO STA. EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-14

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



LINE G

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BWSC PROJECT NO. 34826-00

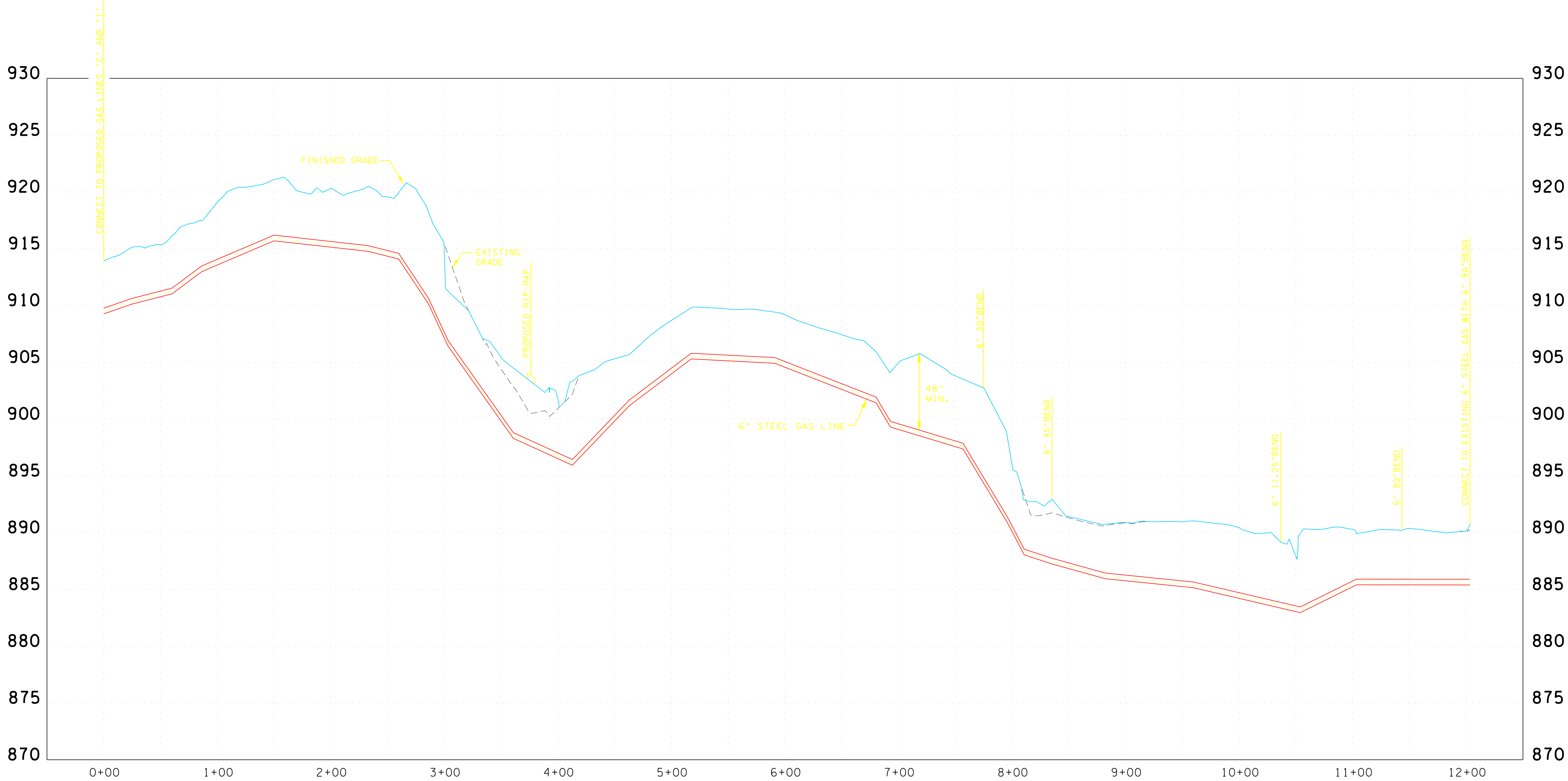
BARBE  
WAGGONER  
SUMNER &  
CANNON, INC.

KNOXVILLE  
UTILITIES  
BOARD

PROFILE  
GAS  
LINE G  
STA. 0+00 TO STA. EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-15

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



LINE H

COORDINATE VALUES ARE NAD/83(1995)  
AND ARE DATUM ADJUSTED BY THE  
FACTOR 1.0001 & TIED TO THE TGRN.

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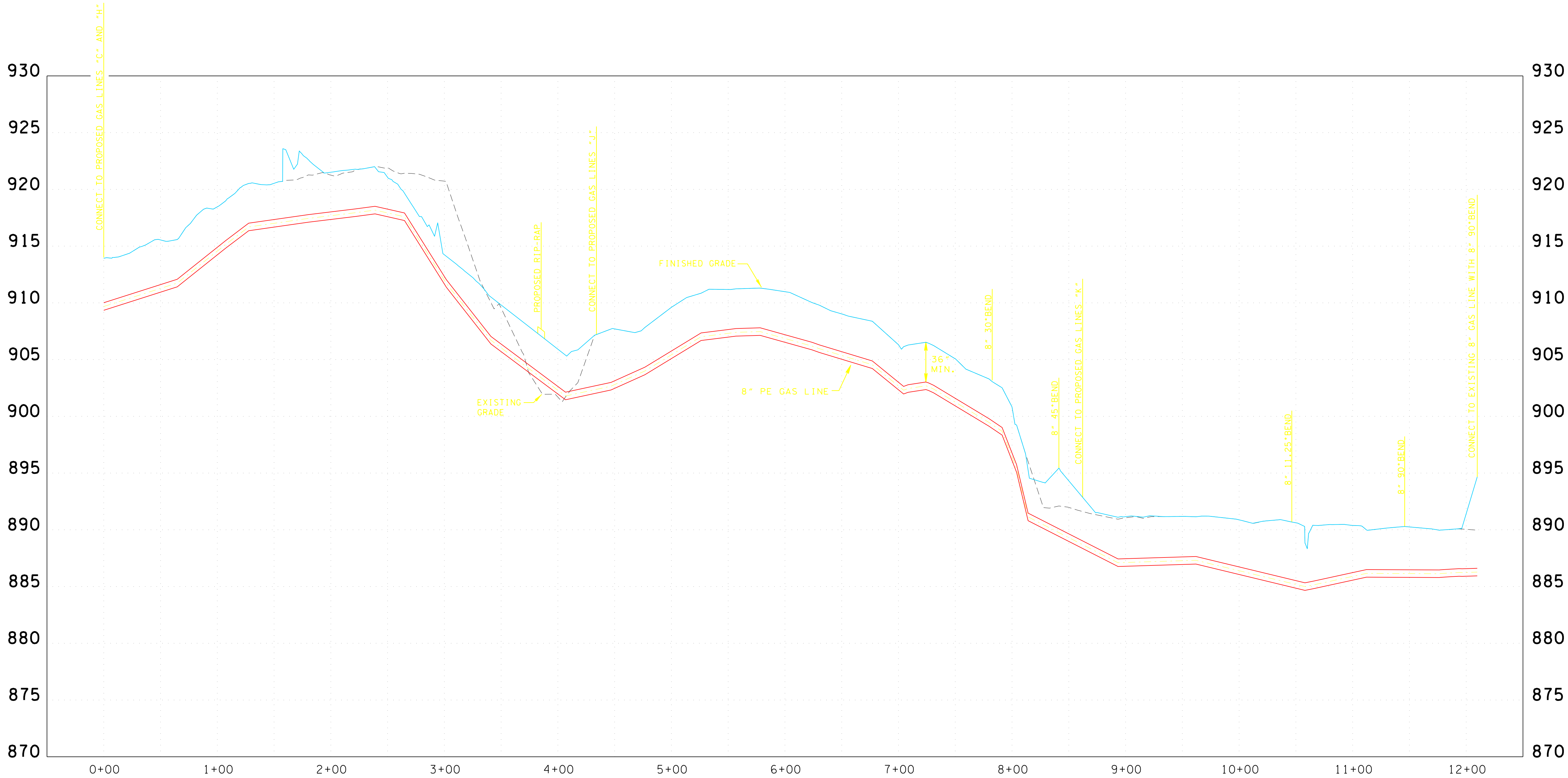
BARBE  
WAGGONER  
SUMNER &  
CANNON, INC.

KNOXVILLE  
UTILITIES  
BOARD

PROFILE  
GAS  
LINE H  
STA. 0+00 TO STA. EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-16

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



LINE I

COORDINATE VALUES ARE NAD/83(1995)  
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FACTOR 1.0001 & TIED TO THE TGRN.

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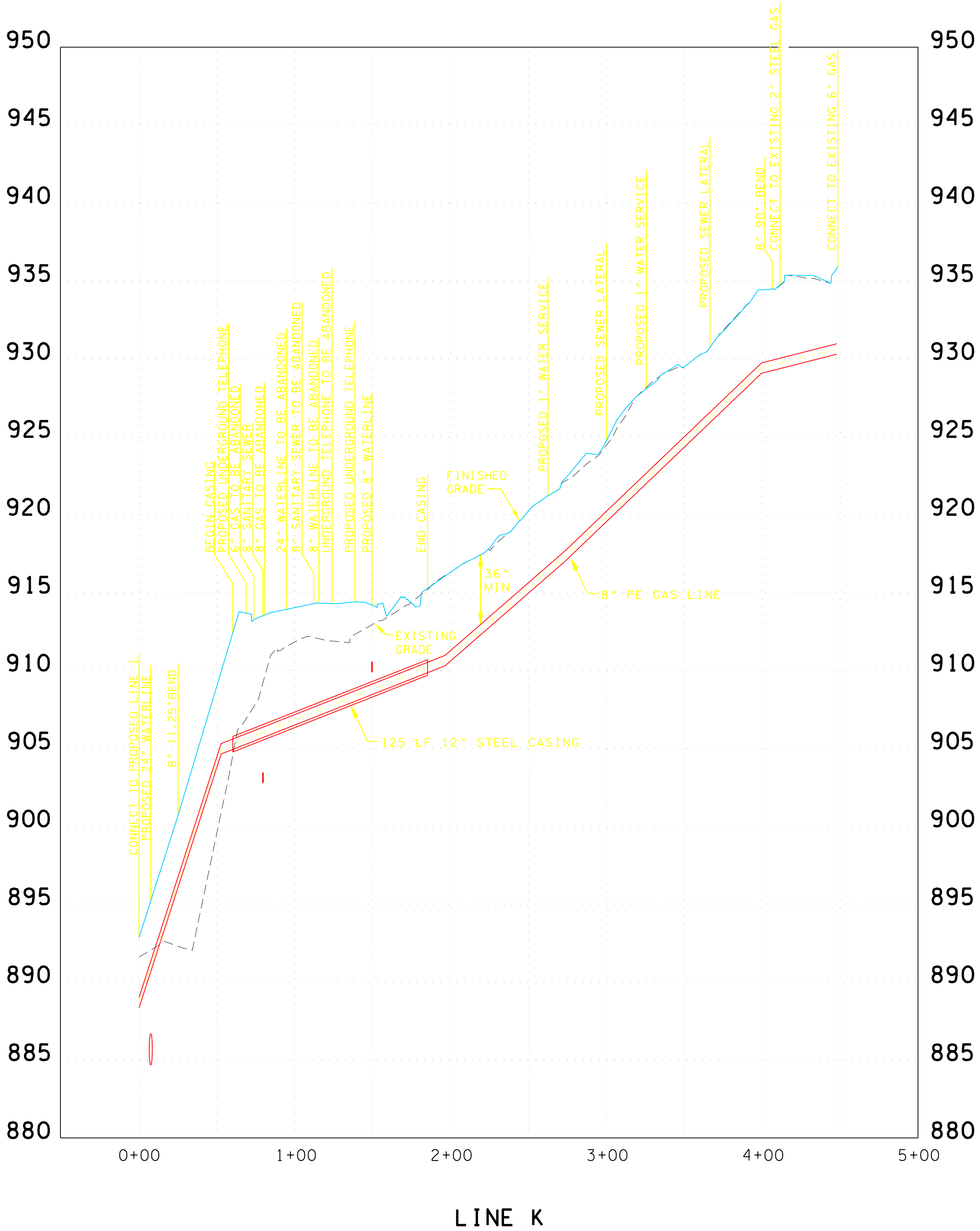
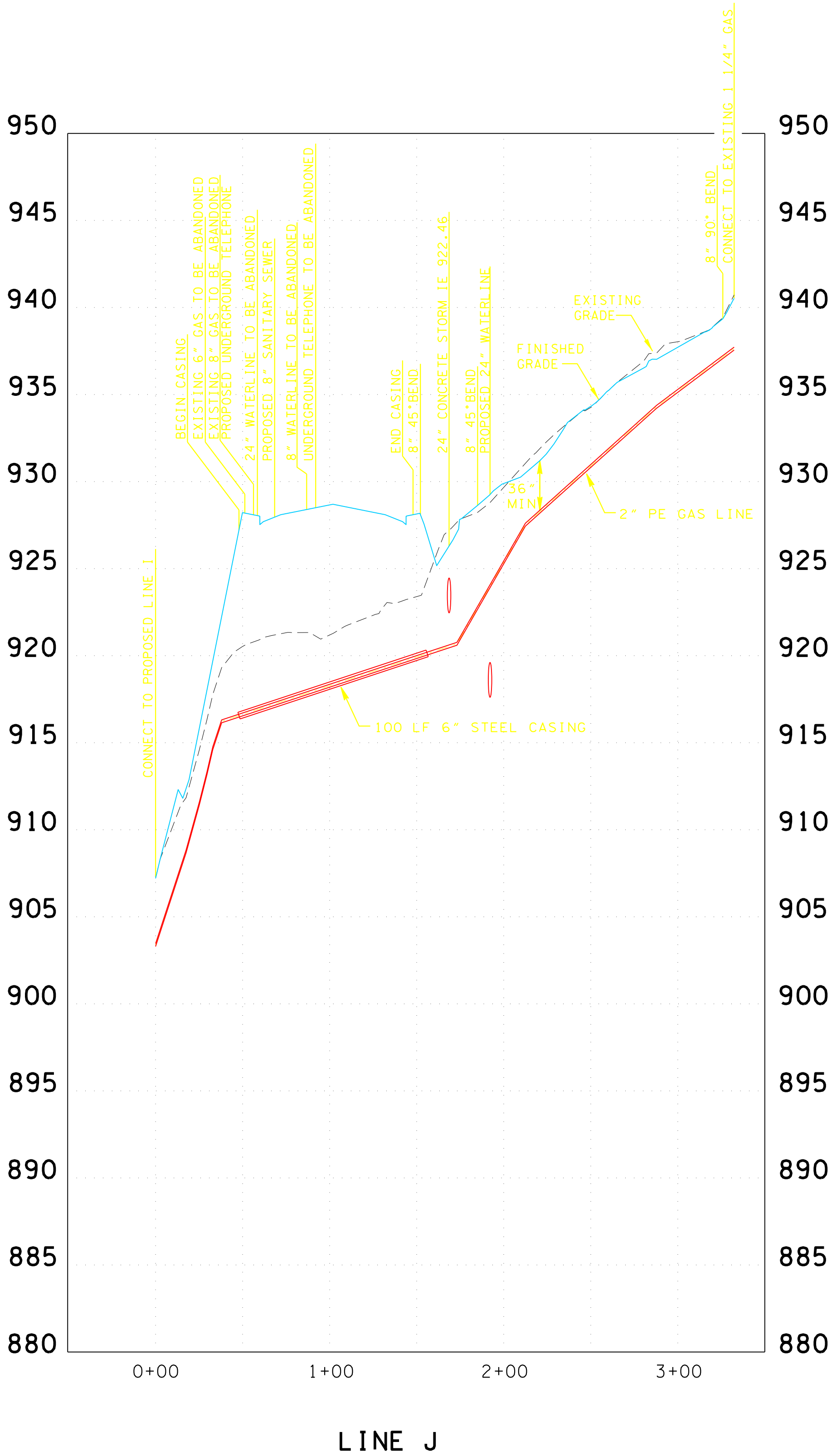
BARBE  
WAGGONER  
SUMNER &  
CANNON, INC.

KNOXVILLE  
UTILITIES  
BOARD

PROFILE  
GAS  
LINE I  
STA. 0+00 TO STA. EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-17

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



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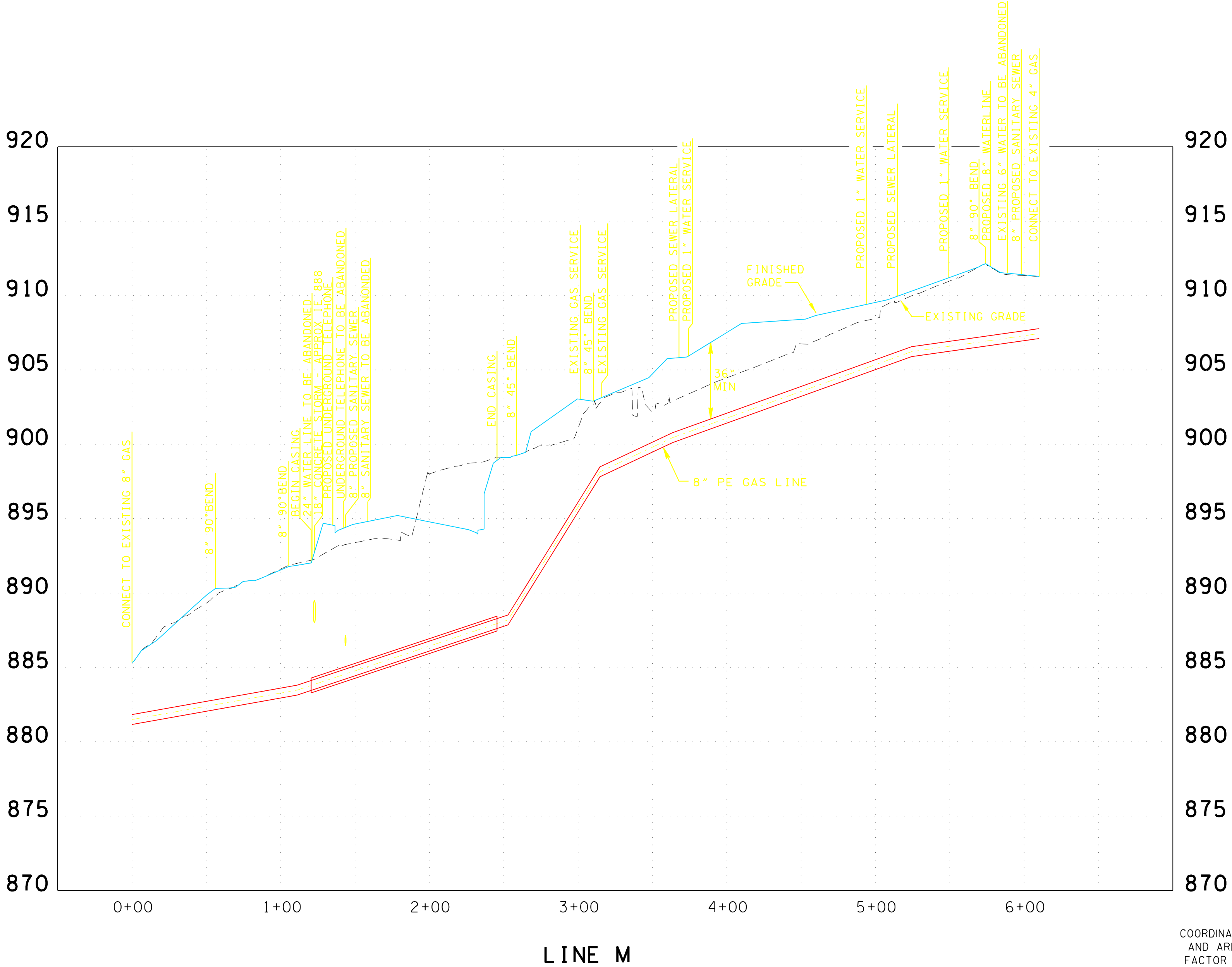
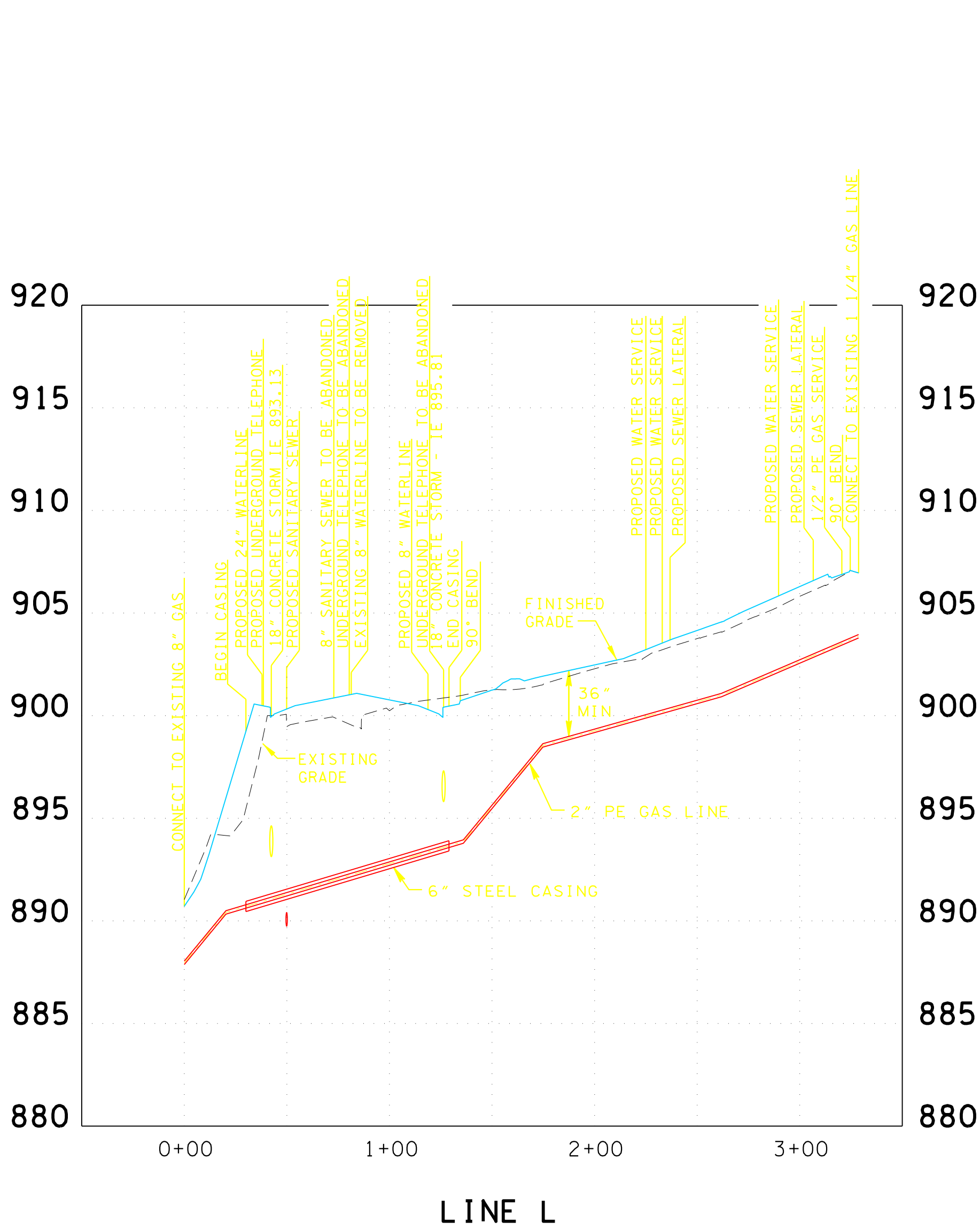
BARBE  
WAGGONER  
SUMNER &  
CANNON, INC.

KNOXVILLE  
UTILITIES  
BOARD

PROFILE  
GAS  
LINES J & K  
STA. 0+00 TO STA. EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-18

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



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BWSC PROJECT NO. 34826-00

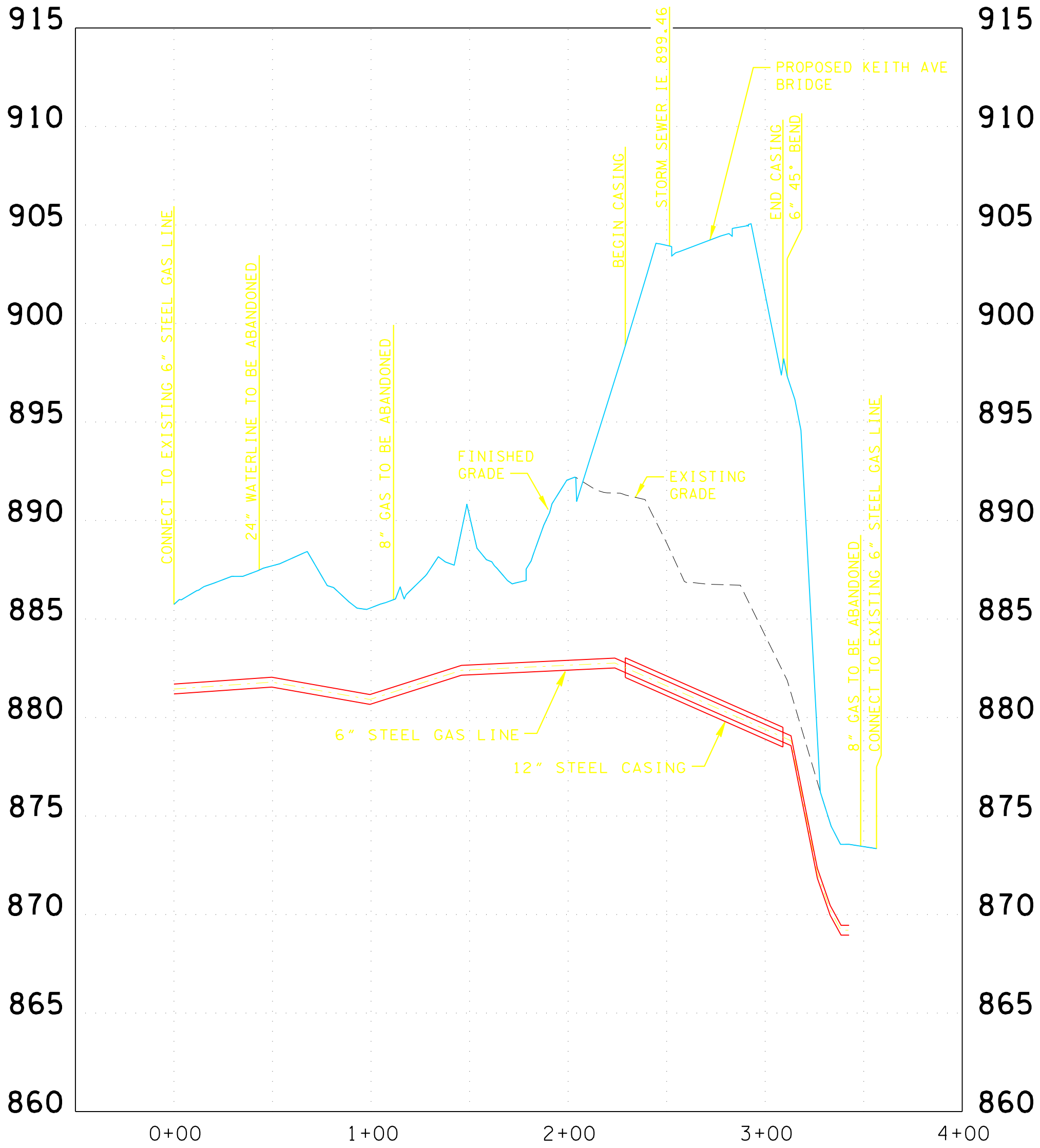
BARBE  
WAGBOWER  
SUMNER &  
CANNON, INC.

KNOXVILLE  
UTILITIES  
BOARD

PROFILE  
GAS  
LINES L & M  
STA.0+00 TO STA.EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-19

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



LINE 0

COORDINATE VALUES ARE NAD/83(1995)  
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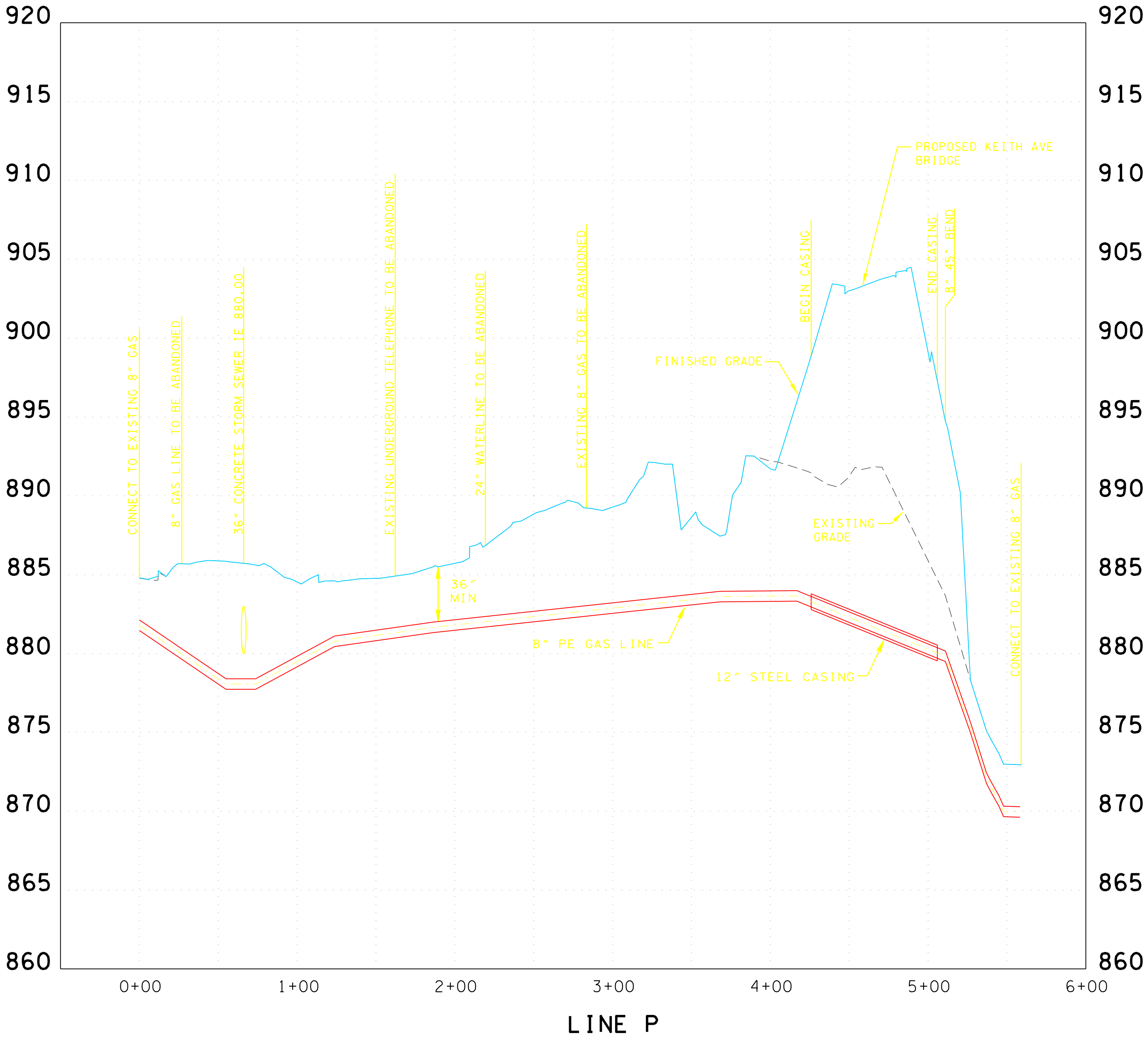
BARBE  
WAGGONER  
SUMNER &  
CANNON, INC.

KNOXVILLE  
UTILITIES  
BOARD

PROFILE  
GAS  
LINE 0  
STA. 0+00 TO STA. EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-20

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



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BWSC PROJECT NO. 34826-00

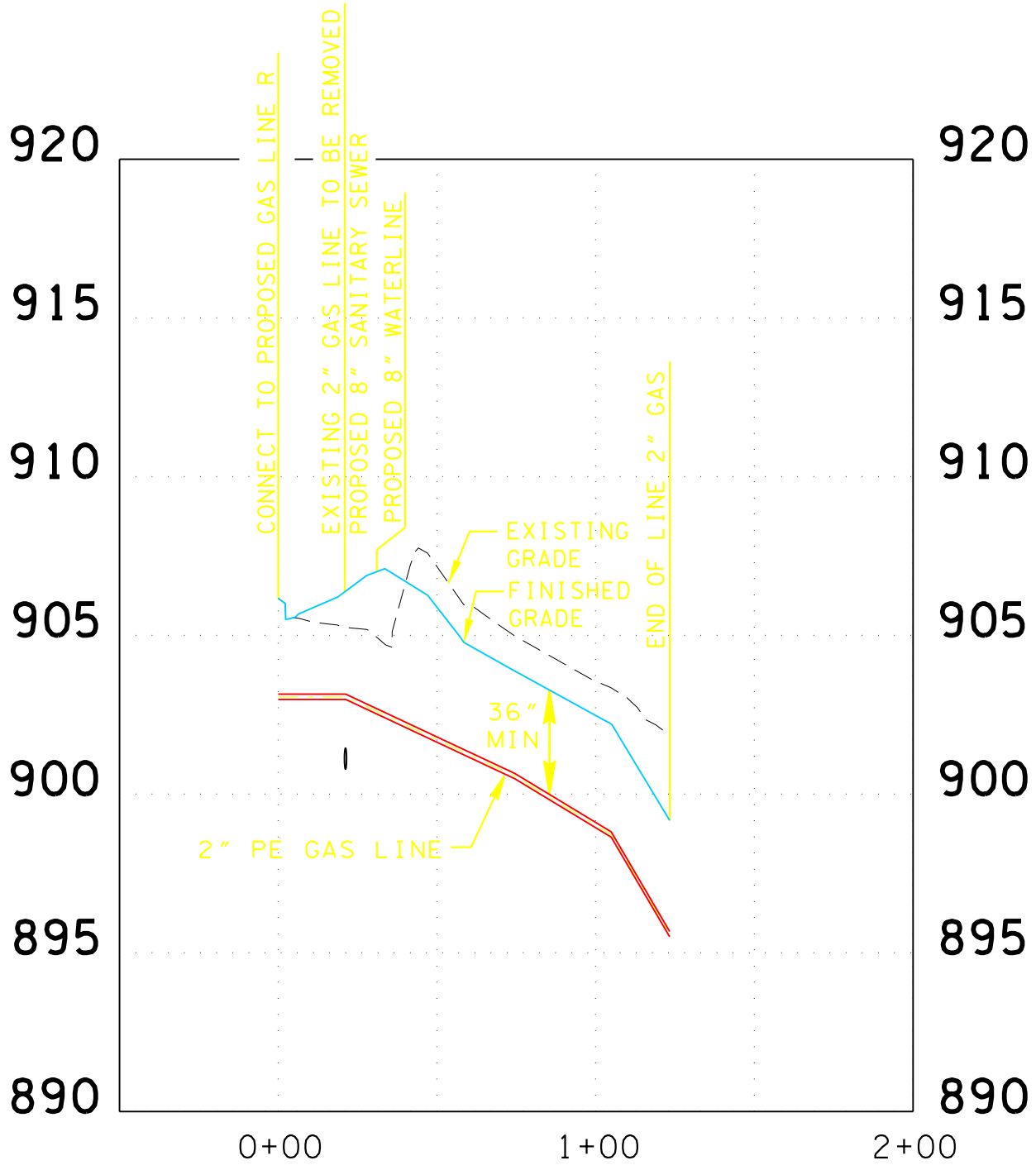
BARBE  
WAGGONER  
SUMNER &  
CANNON, INC.

KNOXVILLE  
UTILITIES  
BOARD

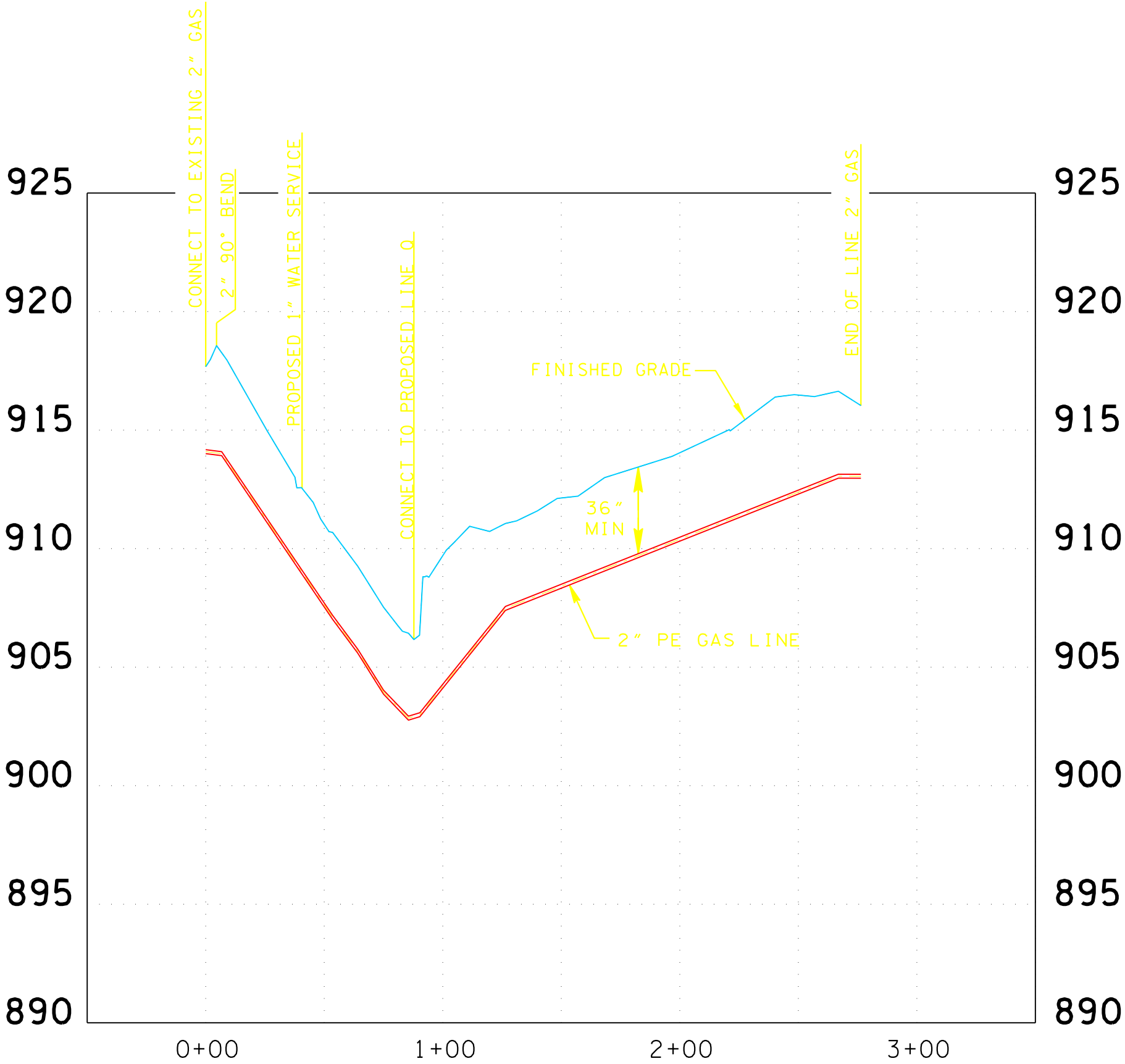
PROFILE  
GAS  
LINE P  
STA. 0+00 TO STA. EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-21

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



LINE Q



LINE R

COORDINATE VALUES ARE NAD/83(1995)  
AND ARE DATUM ADJUSTED BY THE  
FACTOR 1.0001 & TIED TO THE TGRN.

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BWSC PROJECT NO. 34826-00

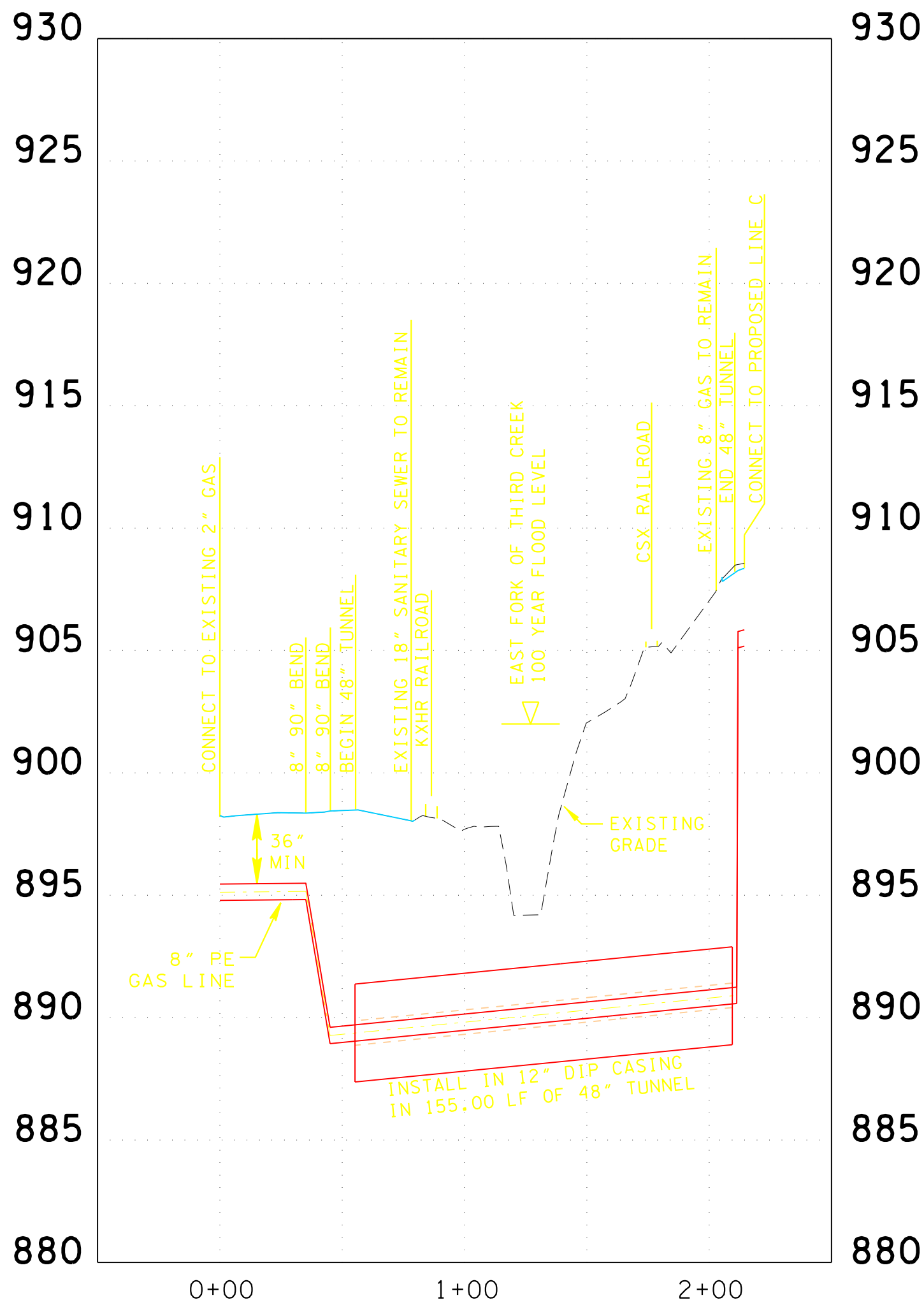
BARBE  
WAGGONER  
SUMNER &  
CANNON, INC.

KNOXVILLE  
UTILITIES  
BOARD

PROFILE  
GAS  
LINES Q & R  
STA.0+00 TO STA.EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST	2016	HPP/STP-62(34)	U5-22

S.R. 62 (WESTERN AVE.) KNOX CO.  
47023-3261-14 (CONST.)  
PIN #101204.00



LINE S

COORDINATE VALUES ARE NAD/83(1995)  
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BWSC PROJECT NO. 34826-00

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CANNON, INC.

KNOXVILLE  
UTILITIES  
BOARD

PROFILE  
GAS  
LINE S  
STA. 0+00 TO STA. EOL  
SCALE: 1"=5' HORIZ.  
1"=50' VERT.

GEOTECHNICAL BASELINE DRAWING - NOTES

1.

IN LIEU OF A GEOTECHNICAL BASELINE REPORT (GBR), GEOTECHNICAL BASELINE DRAWINGS ESTABLISH A CONTRACTUAL STATEMENT OF THE SUBSURFACE CONDITIONS, REFERRED TO AS THE BASELINE CONDITIONS FOR PIT AND TUNNEL CONSTRUCTION.
2.

DRAWINGS ENTITLED "GEOTECHNICAL BASELINES" SHOULD BE CONSIDERED EQUIVALENT STATEMENTS TO THOSE CONVENTIONALLY PROVIDED IN A GEOTECHNICAL BASELINE REPORT (GBR). THE PURPOSE OF THE GEOTECHNICAL BASELINE DRAWINGS IS TO:

a)

SET BASELINES FOR GEOTECHNICAL CONDITIONS AND MATERIAL BEHAVIOR ANTICIPATED TO BE ENCOUNTERED DURING SHAFT EXCAVATION (INCLUDING JACKING/WORKING AND RECEIVING/RETRIEVAL SHAFTS) AND TUNNEL EXCAVATION.

b)

IDENTIFY IMPORTANT CONSTRUCTION CONSIDERATIONS, KEY PROJECT CONSTRAINTS, AND SELECTED REQUIREMENTS THAT NEED TO BE ADDRESSED BY THE CONTRACTORS DURING BID PREPARATION AND CONSTRUCTION.

c)

PROVIDE GUIDANCE TO OWNER AND THEIR REPRESENTATIVES IN ADMINISTRATING THE CONTRACT AND MONITORING CONTRACTOR PERFORMANCE.
3.

THESE GEOTECHNICAL BASELINE DRAWINGS ARE THE SOLE DOCUMENTS FOR GEOTECHNICAL INTERPRETATION FOR THIS PROJECT. THE INTERPRETATION OF SUBSURFACE CONDITIONS DISCUSSED ON THESE DRAWINGS REFLECTS THE DESIGN TEAM'S INTERPOLATION BETWEEN EXPLORATORY BOREHOLE DATA, ENGINEERING JUDGMENT, PAST CONSTRUCTION EXPERIENCE, AND THE OWNER'S ATTITUDE TOWARD RISK. THE INTERPRETATIONS MADE IN THIS REPORT DO NOT NECESSARILY REFLECT ACTUAL SITE SPECIFIC GROUND CONDITIONS TO BE ENCOUNTERED. ASSUMPTIONS MADE BY THE CONTRACTOR WHICH ARE MORE OPTIMISTIC THAN THE CONTRACTUAL BASELINES CONTAINED HEREIN ARE MADE AT THE CONTRACTOR'S RISK. THE CONTRACTOR MUST RECOGNIZE AND UNDERSTAND THAT HE IS RESPONSIBLE FOR CONDITIONS MORE FAVORABLE THAN THE STATED BASELINES UP TO AND INCLUDING THE BASELINE CONDITIONS REGARDLESS OF ASSUMPTIONS MADE DURING THE BID PHASE. THE BASELINES WILL BE USED TO JUDGE THE MERITS OF ANY DIFFERING SITE CONDITION (DSC) CLAIMS REGARDLESS OF HOW THE CONTRACTOR BIDS THE WORK.
4.

THE GEOTECHNICAL BASELINE DRAWINGS ARE BASED UPON SEVERAL ASSUMPTIONS REGARDING THE SEQUENCE OF CONSTRUCTION AND THE MEANS AND METHODS, AND WORKMANSHIP TO BE EMPLOYED BY THE CONTRACTOR. THE BEHAVIOR OF SUBSURFACE MATERIALS AS DESCRIBED HEREIN WILL BE INFLUENCED BY THE MEANS AND METHODS SELECTED AND USED DURING CONSTRUCTION BY THE CONTRACTOR, AND THEREFORE BEHAVIOR MAY VARY FROM THAT DESCRIBED IN THIS REPORT. THE CONTRACTOR MUST EVALUATE THE SOIL, ROCK, AND GROUNDWATER CONDITIONS DESCRIBED HEREIN AS THEY RELATE TO, AND INTERACT WITH, THE MEANS AND METHODS SELECTED BY THE CONTRACTOR FOR CONSTRUCTION.
5.

ANY CONFLICT BETWEEN THE GEOTECHNICAL BASELINE DRAWINGS AND THE CONTRACTOR'S PROPOSED MEANS AND METHODS MUST BE RAISED AND DISCUSSED WITH OWNER DURING THE BID PHASE PRIOR TO AWARD OF CONTRACT. FAILURE OF THE CONTRACTOR TO INFORM OWNER THAT THE BASELINES ARE INVALID OR REQUIRE MODIFICATION DURING THE BID PHASE WILL RESULT IN THE BASELINE BEING ENFORCED AS STATED IN THE CONTRACT.
6.

THE GEOTECHNICAL BASELINE DRAWINGS REFERENCE THE GEOTECHNICAL INVESTIGATION REPORT (GIR) ENTITLED "REPORT OF GEOTECHNICAL EXPLORATION THIRD CREEK UTILITY CROSSING" PREPARED BY GEOSERVICES DATED JUNE 22, 2015. THE GIR PRESENTS DETAILS OF THE FIELD INVESTIGATION AND THE RESULTS OF THE LABORATORY TESTING PERFORMED ON SOIL AND ROCK SAMPLES COLLECTED DURING THE INVESTIGATION, INCLUDING DETAILED DESCRIPTIONS OF THE FIELD AND LABORATORY TESTING DATA, METHODS, AND PROCEDURES. BORING LOGS AND LABORATORY TEST RESULTS ARE PRESENTED IN THE GIR. THE GEOTECHNICAL BASELINE DRAWINGS AND THE GIR ARE INCLUDED IN THE CONTRACT DOCUMENTS. IF THERE ARE ANY INCONSISTENCIES BETWEEN THE GEOTECHNICAL BASELINE DRAWINGS AND THE GIR, THE GEOTECHNICAL BASELINE DRAWINGS SHALL TAKE PRECEDENCE.
7.

SOME OF THE TECHNICAL CONCEPTS, TERMS, AND DESCRIPTIONS IN THE GEOTECHNICAL BASE DRAWINGS FOLLOW STANDARDS COMMONLY USED IN GEOTECHNICAL ENGINEERING/ENGINEERING GEOLOGY WHICH HAVE SPECIFIC MEANING AS THEY PERTAIN TO THE WORK. BIDDERS SHOULD HAVE A QUALIFIED GEOTECHNICAL ENGINEER OR ENGINEERING GEOLOGIST WITH EXPERIENCE IN ALL OF THE TOPICS ADDRESSED IN THIS REPORT CAREFULLY REVIEW AND EXPLAIN THIS INFORMATION SO THAT A COMPLETE UNDERSTANDING OF THE INFORMATION PRESENTED IN THIS REPORT IS DEVELOPED PRIOR TO SUBMITTING A BID.
8.

FOR BIDDING PURPOSES THE CONTRACTOR SHALL ASSUME THE FOLLOWING BASELINES IN ADDITION TO THE DRIVE SPECIFIC GEOTECHNICAL BASELINES PRESENTED ON DRAWINGS.

a)

TEMPORARY GROUND SUPPORT - PITS: PIT SUPPORT SYSTEMS SUCH AS TRENCH BOX/SLIDING RAIL SYSTEM OR OTHER SUITABLE ALTERNATIVES ARE ACCEPTABLE. THE TEMPORARY GROUND SUPPORT SYSTEM SHALL BE SUBJECT TO THE CONSTRUCTION MANAGER'S APPROVAL.

b)

SPOIL HANDLING & DISPOSAL: TUNNEL CONSTRUCTION SPOILS WILL BE REMOVED VIA PITS AND REMOVED FROM THE SITE FOR DISPOSAL. THE DISPOSAL OF ALL MATERIALS EXCAVATED DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR. FOR BIDDING PURPOSES, THE CONTRACTOR SHALL ASSUME THAT CONTAMINATED MATERIALS (SOIL, ROCK, AND GROUNDWATER) WILL NOT BE PRESENT WITHIN THE PIT AND TUNNEL EXCAVATION ENVELOPES.

c)

OBSTRUCTIONS: AN OBSTRUCTION IS DEFINED AS "A NATURALLY OCCURRING OR MAN-MADE OBJECT, SUCH AS WOOD, OR CONCRETE FRAGMENT THAT LIES ENTIRELY OR PARTIALLY WITHIN THE EXCAVATION ENVELOPE AND IMPEDES THE PROGRESS OF EXCAVATION". FOR BIDDING PURPOSES, THE CONTRACTOR SHOULD ASSUME THAT NO OBSTRUCTIONS WILL BE ENCOUNTERED.

d)

GEOTECHNICAL INSTRUMENTATION: THE CONTRACTOR IS REQUIRED TO CONTROL GROUND SETTLEMENT TO WITHIN THE LIMITS PROVIDED IN THE CONTRACT DOCUMENTS DURING JACKING PIT AND RECEIVING PIT CONSTRUCTION, AND WITHIN THE LIMITS ALONG THE TUNNEL EXCAVATION AS DETAILED IN THE CONTRACT DOCUMENTS. THE SPECIFIED GEOTECHNICAL INSTRUMENTATION AND MONITORING PROGRAM MUST BE IMPLEMENTED PRIOR TO PIT AND TUNNEL EXCAVATION ACTIVITY.
9.

ALL PIT DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FOR CONSTRUCTION OF TUNNELS AND MANHOLE INSTALLATION INCLUDING BACKFILLING TO GROUND SURFACE WITHIN PITS.
10.

PIT SUPPORT OF EXCAVATION (SOE) SHALL BE SELECTED AND DESIGNED BY CONTRACTOR IN ACCORDANCE WITH SPECIFICATIONS.
11.

ALL PIT EXCAVATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATIONS.

GEOTECHNICAL BASELINE

FOR BIDDING PURPOSES THE CONTRACTOR SHALL ASSUME THE FOLLOWING BASELINES SPECIFIC TO TUNNELS IN ADDITION TO THE GENERAL GEOTECHNICAL BASELINES PRESENTED ON THIS DRAWING.

1.

SOIL BEHAVIOR & BASELINE PARAMETERS. THE DISTRIBUTION OF THE DIFFERENT MATERIAL TYPES (FILL, RESIDUUM & ROCK) PRESENT ALONG THE TUNNEL ALIGNMENT ARE SHOWN. TUNNEL AND PIT EXCAVATION FROM GROUND SURFACE TO TUNNEL WILL BE COMPRISED OF FILL, RESIDUUM, AND ROCK.
- FILL - MATERIAL TYPES IN THE FILL INCLUDE LEAN CLAY (CL) AND SANDY LEAN CLAY (CL), (OR POSSIBLY SLAG) WITH CLAY, ROCK AND ASPHALT FRAGMENTS. THE BASELINE PROPERTIES FOR FILL TO BE USED FOR BIDDING PURPOSES ARE AS FOLLOWS:

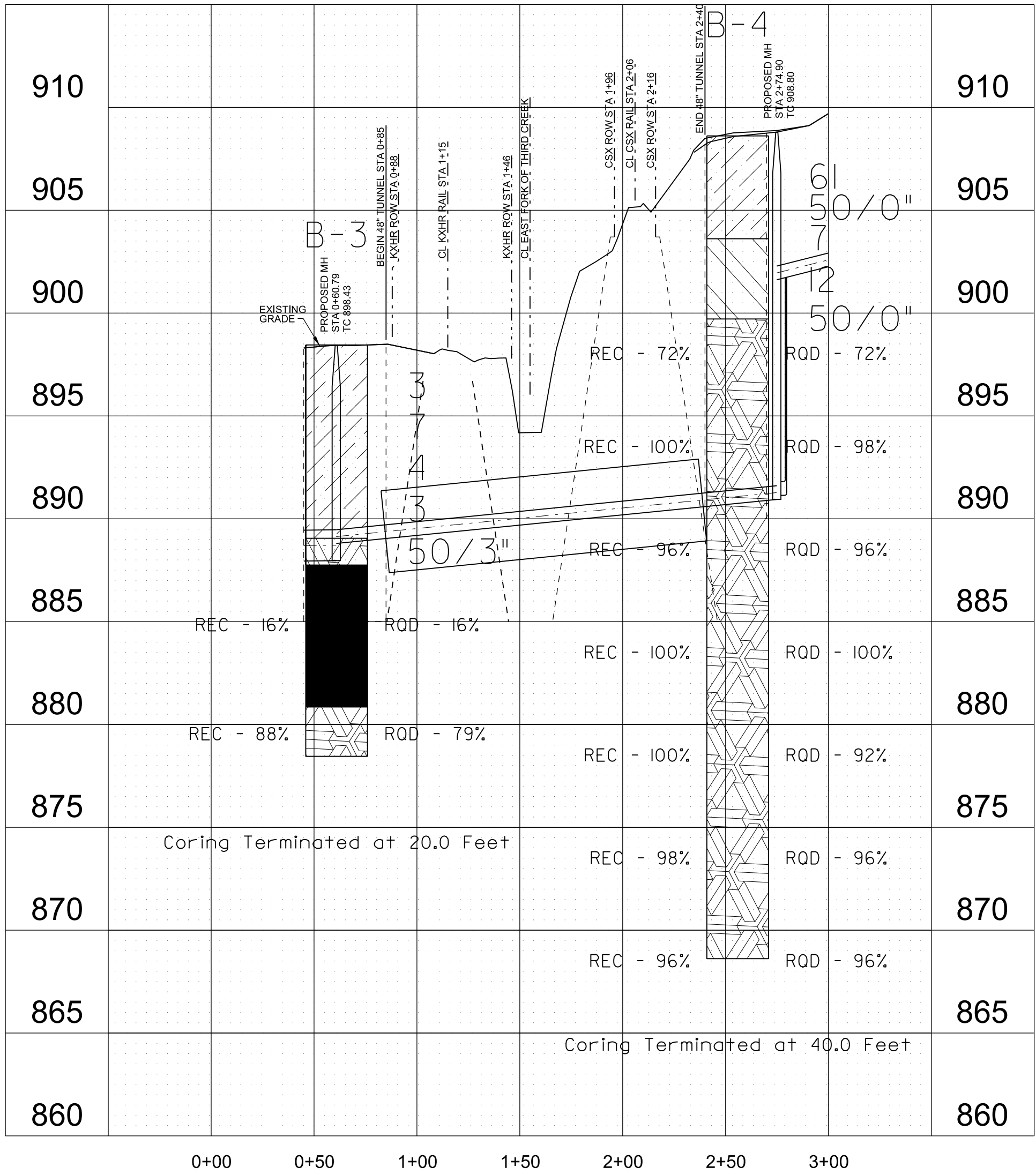
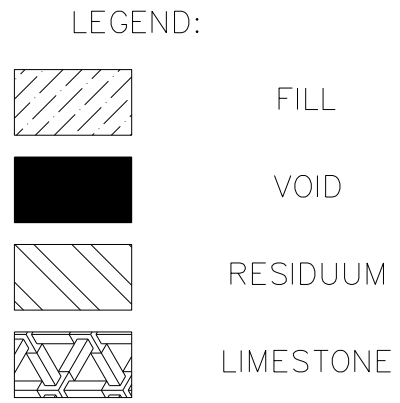
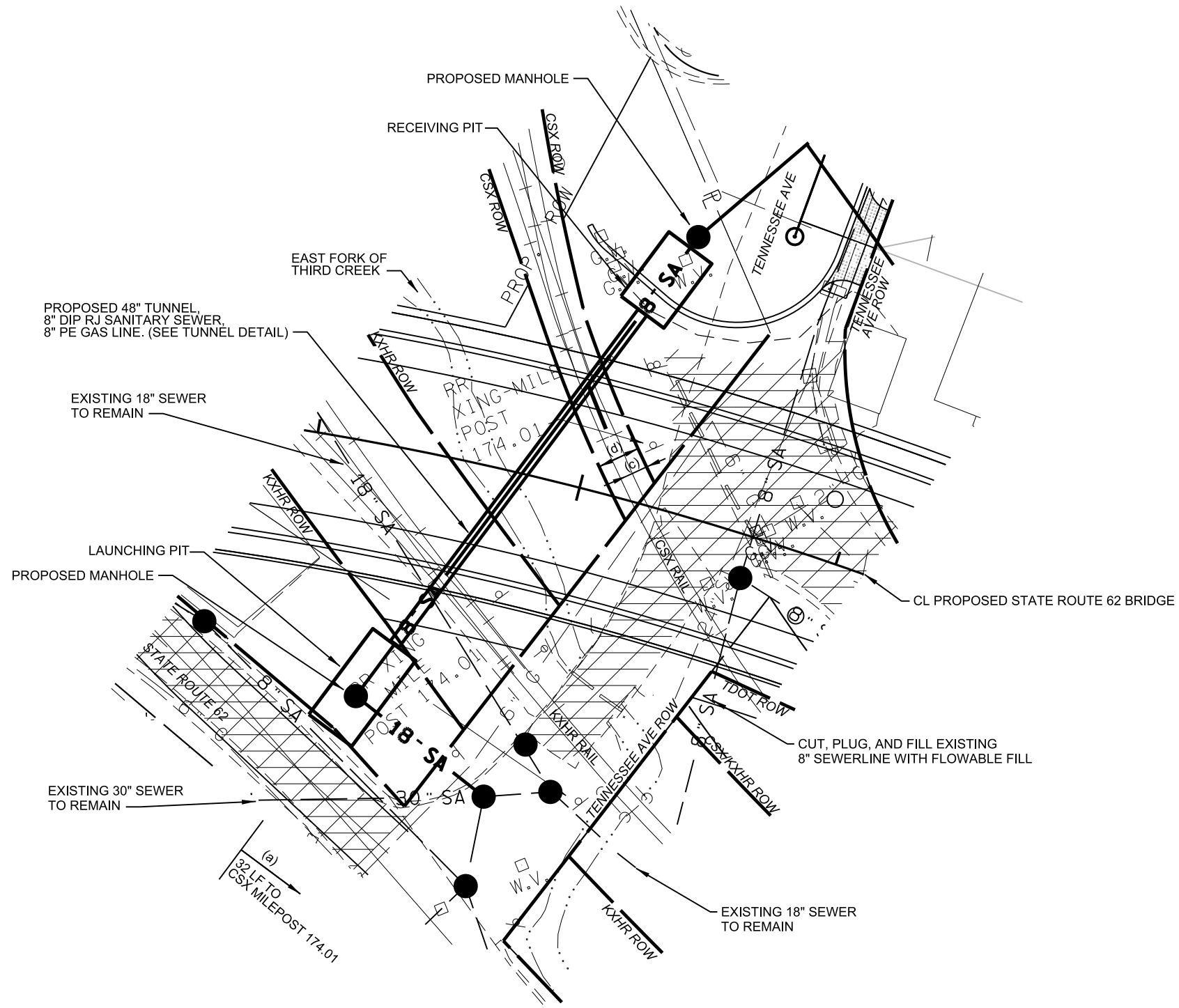
PARAMETER	UNITS	BASELINE VALUES
Total Unit Weight (γ)	pcf	125
Angle of Internal Friction (Ø)	degrees	30
Unconfined Compressive Strength (Suc)	psf	500 to 9,000
Effective Cohesion (C)	psf	2,500 to 4,500
SPT 'N' Value	blows/foot	2 to 50
Hydraulic Conductivity (k)	m/sec	1 x 10 <sup>-6</sup>
- RESIDUUM - MATERIAL TYPES PRESENT WITHIN THE RESIDUUM INCLUDE LEAN CLAY (CL) WITH ROCK FRAGMENTS AND FAT CLAY (CH) WITH SILT AND SHALE FRAGMENTS. THE BASELINE PROPERTIES FOR RESIDUUM TO BE USED FOR BIDDING PURPOSES ARE AS FOLLOWS:

PARAMETER	UNITS	BASELINE VALUES
Total Unit Weight (γ)	pcf	125
Angle of Internal Friction (Ø)	degrees	30
Unconfined Compressive Strength (Suc)	psf	1,000 to 9,000
Effective Cohesion (C)	psf	2,500 to 4,500
SPT 'N' Value	blows/foot	4 to 50
Hydraulic Conductivity (k)	m/sec	1 x 10 <sup>-6</sup>
- ROCK - THE ROCK PRESENT INCLUDES WEATHERED CARBONATE ROCK (NOLICHUCKY SHALE FORMATION) WITH VOIDS. THE BASELINE PROPERTIES FOR ROCK TO BE USED FOR BIDDING PURPOSES ARE AS FOLLOWS:

PARAMETER	UNITS	BASELINE VALUES
Rock Recovery (REC)	percent	16 to 100 / Average = 87
Rock Quality Designation (RQD)	percent	16 to 100 / Average = 87
Unconfined Compressive Strength (UCS)	psi	9,000 to 16,000 / Average = 12,950

2.

CONTROL OF WATER: GROUNDWATER INFLOW DURING PIT AND TUNNEL EXCAVATION WILL BE PRESENT AND WILL FLUCTUATE BASED ON SEASONAL PRECIPITATION OR CONSTRUCTION ACTIVITY.



BASELINE GROUND CONDITIONS

SCALE: 1"= 50' HORIZ.  
1"= 5' VERT.

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BWSC

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